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FM 2-15

WAR DEPARTMENT

CAVALRY FIELD MANUAL



EMPLOYMENT OF CAVALRY

April 8, 1941

CAVALRY FIELD MANUAL

EMPLOYMENT OF CAVALRY

CHANGES }
No. 2 }

WAR DEPARTMENT,
WASHINGTON, August 18, 1942.

FM 2-15, April 8, 1941, is changed as follows:

■ 187. PREPARATION.

* * * * *

b. *March schedule.*

* * * * *

(5) Horse elements of cavalry march at the walk or lead at the rate of 4 miles an hour, or 0.06% (or 0.07 of a mile for practical purposes) in 1 minute. At the 8-mile trot, horse elements make 0.13 mile in a minute. (The exact distance is 0.13 $\frac{1}{8}$ mile).

(6) Based on 55 minutes of marching time and 5 minutes' halt in each hour, subsequent to the first hour, the number of minutes of trot required in each period to maintain certain rates of march are as follows:

<i>Rate of march in mph</i>	<i>Minutes of trot</i>
4. 5-----	12. 5
5. -----	20.
5. 5-----	27. 5
6. -----	35.
6. 5-----	42. 5
7. -----	50.

(7) Rescinded.

* * * * *

[A. G. 062.11 (8-9-42).] (C 2, Aug. 18, 1942.)

■ 189. CONDUCT.

* * * * *

d. *Gaits.*—(1) The normal marching gaits for horse elements of cavalry are the lead and walk at 4 miles per hour and the trot at 8 miles per hour. The gallop is used only under exceptional circumstances or when required by the tactical situation.

(2) The physical condition of the men and animals and the footing determine whether or not the regulation rate of march for the various gaits can be maintained.

* * * * *

(13) (c) The following examples are included to illustrate the methods employed by the timekeeper in recording the conduct of a march and computing the distance traveled:

FIRST HOUR'S RECORD

Walk	Trot	Halt	1 minute walk equals 0.07 mile; 1 minute trot equals 0.13 mile
.	.	.	
28 0.07	22 0.13	----- -----	
1.96	2.86	-----	4.82 miles, first hour.

A SUCCEEDING HOUR'S RECORD

Walk	Trot	Halt	1 minute walk equals 0.07 mile; 1 minute trot equals 0.13 mile
.	.	.	
20 0.07	35 0.13	----- -----	
1.4	4.55	-----	5.95 miles, second hour.

EMPLOYMENT OF CAVALRY

C 2

LAST HOUR'S RECORD

Walk	Trot	Halt	1 minute walk equals 0.07 mile; 1 minute trot equals 0.13 mile
.	.	.	* * * *
25	28	-----	
0.07	0.13	-----	
1.75	3.64	-----	5.39 miles, march completed.

* * * * *

f. March discipline.

* * * * *

(2) (h) Men falling out of column do so in pairs. When ready to resume the march before the arrival of the tail of the column, they do so at the normal gaits. Trots are not extended beyond the 8-mile rate, and the gallop is not resorted to. The men gain distance by walking for shorter periods and by continuing to march during halt periods. While the column is trotting they join the nearest element.

* * * * *

[A. G. 062.11 (8-9-42).] (C 2, Aug. 18, 1942.)

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

FM 2-15

CAVALRY FIELD MANUAL



EMPLOYMENT OF CAVALRY

**Prepared under direction of the
Chief of Cavalry**



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WASHINGTON, *April 8, 1941.*

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is published for the information and guidance of all
concerned.

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By ORDER OF THE SECRETARY OF WAR:

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CAVALRY FIELD MANUAL

EMPLOYMENT OF CAVALRY

(This manual supersedes Cavalry Field Manual, volume III, January 3, 1938.)

CHAPTER I

GENERAL

■ 1. **DEFINITION OF CAVALRY.**—Cavalry is that combatant arm of the ground forces organized primarily to perform missions requiring great mobility and fire power. It comprises horse, porté, and mechanized elements. In combination, these elements are employed so that one supplements the other; however, elements of each type are entirely capable of independent operation within the sphere of action determined by its powers and limitations. Cavalry can operate either in close cooperation with other arms or separately. (See FM 100-5.)

■ 2. **CHARACTERISTICS.**—*a.* The principal characteristics of Cavalry are mobility and fire power.

b. The mobility of Cavalry permits it to shift quickly from one point to another and to operate over a wide area and at great distances from supporting forces on the battlefield. The battlefield mobility of Cavalry enables it to concentrate rapidly for a decisive attack or to withdraw quickly in order to renew the action elsewhere.

c. The mobility of Cavalry depends upon the condition of its horses and vehicles. To maintain horses and motor vehicles in good condition during campaign requires continuous care, supervision, foresight, and planning. Given food, water, and rest, animals can renew their strength wherever they happen to be. Motor vehicles are dependent upon supplies, such as fuel, oil, and spare parts, for their operation. The effectiveness of Cavalry over extended periods depends largely upon the efficiency of the supply and maintenance system. Normally it is supplied by motor transportation. It can be supplied by air transport or pack train and, in emer-

gency, can subsist its men and animals off the country for considerable periods of time.

d. Large horse units, with well-conditioned men and animals, can march 35 miles a day for considerable periods and, in emergency, 125 miles in 48 hours. Smaller units can exceed these rates. Horse units can be moved by boat, rail, or motor at the same rate as other troops. The mobility of horse elements is characterized by their ability to operate on almost any type of terrain and under practically all types of weather conditions.

e. Cavalry mechanized elements, with well-trained personnel and vehicles properly maintained, can march 180 miles a day and, in emergency, 300 miles in 24 hours or 450 miles in 48 hours. Open rolling country with numerous patches of woods for cover and concealment is favorable to the employment of mechanized vehicles. Mud, deep snow, poor visibility, and adverse weather conditions impose limitations on the capabilities of wheeled motor vehicles.

f. The fire power of Cavalry includes most of the small arms, semiautomatic and automatic, which are allotted to Infantry. It possesses weapons of both flat and curved trajectory. Special antitank weapons are liberally allotted to cavalry units. All cavalry weapons are utilized when necessary for antiaircraft fire. Large cavalry units include organically light artillery and may have attached medium artillery, additional antitank units, and antiaircraft units as required. Small arms are transported on the person, by pack horses, or in vehicles, which makes them extremely flexible and maneuverable on the battlefield. Organic artillery with cavalry divisions comprises both horse drawn and motorized units. This extensive allocation of weapons gives large cavalry units a fire power which man for man is commensurate with that of other major ground combat units.

■ 3. ORGANIZATION.—*a. Corps.*—The cavalry corps has a flexible organization. It is composed of two or more cavalry divisions and may have other supporting or reinforcing units. The cavalry corps is assigned organically a corps headquarters and headquarters troop and a signal troop. It may have attached aviation, motorized Infantry, elements of the armored force, additional artillery and engineers, special antiaircraft and antimechanized units, and administra-

tive units necessary for corps troops. When a cavalry corps is operating separately, or when a superior commander has delegated administrative and supply functions to it, the cavalry corps commander is responsible for the administration and supply of all assigned and attached units. The cavalry corps normally performs missions for GHQ or for an army.

b. Division.—The cavalry division is a tactical and administrative unit consisting of two brigades, a division headquarters and headquarters troop, a mechanized reconnaissance squadron, an antitank troop, and artillery, engineers, communication, and service elements. It may have attached, for a particular operation, elements of the armored force or GHQ tanks, motorized Infantry and aviation, as well as additional artillery, engineers, and service units. It may be assigned an independent mission which requires operations far from other troops. It may be assigned to a cavalry corps; it may be assigned or attached to an army corps (Infantry), a field army, or a group of armies; it may be attached to an armored corps, or it may be held in GHQ reserve.

c. Brigade.—The cavalry brigade is a tactical unit which normally forms part of a cavalry division. It is composed of a brigade headquarters and headquarters troop, a weapons troop, and two cavalry regiments (horse). When a cavalry brigade is detached for a particular operation it may be reinforced with aviation, artillery, and necessary elements of other arms and services.

d. Regiment.—(1) *Horse.*—The cavalry regiment (horse) is a complete tactical and administrative unit. It consists of a headquarters, a headquarters and service troop, a machine gun troop, a special weapons troop, and two rifle squadrons, each squadron containing a headquarters and three rifle troops. The cavalry regiment (horse) normally operates as an organic part of the cavalry brigade and division. The regiment is the smallest unit which possesses organically all the elements of a balanced cavalry combat unit: reconnaissance, fire support, and striking power. Often it should be reinforced by the attachment of artillery and antitank units. The command and control facilities are adequate for effective and rapid employment in all types of cavalry action even when separated from its mechanized elements.

(2) *Horse and mechanized.*—The cavalry regiment (horse and mechanized) is a complete tactical and administrative

unit. It consists of regimental headquarters, a headquarters troop, a service troop, a mechanized reconnaissance squadron, and a horse squadron porté. This unit is organized and equipped especially to perform reconnaissance and security missions for the army corps. Being a combination of mechanized reconnaissance vehicles, motorized weapons, and porté horse units, the regiment possesses within itself great mobility. It is capable of operating on wide fronts and at considerable distances from other troops. The horse and mechanized elements of the regiment may be used in various combinations as combat teams which allows great flexibility in their employment. The regiment carries out its missions during the concentration and movement of the corps, when contact with the enemy is gained, during battle, pursuit, and in retirement. It may be employed as corps reserve. In addition to reconnaissance and security missions, and to carry out these missions, the regiment engages in offensive and defensive operations. When performing reconnaissance and security missions, the regiment normally operates in close cooperation with the corps aviation. It may at times be reinforced or supported by motorized Infantry and Engineers and by truck-drawn artillery. All or part of the regiment may be attached to the infantry division for missions similar to those normally performed for the corps.

e. Reconnaissance squadron, mechanized, cavalry division.—The reconnaissance squadron, mechanized, consists of squadron headquarters, two reconnaissance troops, one motorcycle troop, and one armored troop. It is organized and equipped especially to perform reconnaissance missions for the cavalry division of which it is an organic part. It possesses great road mobility and, under favorable conditions, considerable cross-country mobility. The armored troop provides a means of breaking through hostile resistance that may have held up the scout car and motorcycle elements. The squadron may be reinforced by porté horse units from the regiments of the division. When required, the squadron or its elements may be assigned security or delaying missions.

f. Reconnaissance troop, mechanized (with infantry division).—The reconnaissance troop, mechanized, consists of a troop headquarters and three reconnaissance platoons. It is organized and equipped especially to perform reconnaissance and security missions for the infantry division of which it

is an organic part. It possesses great road mobility and restricted cross-country mobility. It has limited offensive fighting power and must be reinforced when required to fight to obtain information or when assigned an offensive combat mission. It cannot traverse difficult country in reconnaissance of roads. For complete reconnaissance of such terrain it should be reinforced by foot or horse elements.

■ 4. MISSIONS.—The missions of Cavalry include—

a. Offensive combat, including attack, pursuit, and exploitation of a break-through.

b. Defensive combat, including defense, delaying action, and holding important terrain until the arrival of other forces.

c. Reconnaissance.

d. Security for other arms, including counterreconnaissance and covering actions.

e. Special operations, such as filling gaps, constituting a mobile reserve for other forces, and providing liaison between large forces.

■ 5. BASIC DOCTRINE.—a. The primary mission of Cavalry is combat. Its mobility permits it to extend the scope of operation of less mobile ground troops and secure freedom of action for them. In a war of movement Cavalry is employed initially for surprise thrusts into enemy territory, for reconnaissance, and for screening and covering other forces. Thereafter, its most effective employment is in large groups for swift and decisive action. Its main strength must not be dissipated through indiscriminate detachments, nor sacrificed through prolonged performance of missions which belong more properly to other arms.

b. Cavalry seeks successful results through rapidity of action in attack or delaying action rather than through a prolonged offensive or defensive action. Cavalry habitually deploys with little depth. Especially in offensive operations and delaying actions, it accomplishes its missions by using the maneuverability of its fire power to deliver repeated surprise attacks upon the flanks and rear of the enemy. Cavalry is organized, trained, and equipped to fight mounted, dismounted, or in combined mounted and dismounted action. It usually holds out strong reserves when opposed by troops of equal or greater mobility and comparatively weak reserves when operating against less mobile troops.

c. Surprise is an important feature in all successful cavalry operations. Cavalry can best achieve surprise by using its mobility in properly timed and directed operations. Surprise attacks delivered simultaneously against the hostile flanks and rear from two or more different directions increase greatly the chances of success.

CHAPTER 2

OFFENSIVE COMBAT

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SECTION I

ATTACK

§ 6. GENERAL.—*a. Method.*—(1) Cavalry seeks decisive results through rapidity of maneuver and powerful surprise attacks upon the weak points of the hostile dispositions. It must be imbued with the spirit of the offensive.

(2) Cavalry attacks mounted, dismounted, or by a combination of these methods.

b. Horse elements.—(1) The horse elements of Cavalry constitute the principal strength of cavalry units in the attack.

(2) Small, isolated horse units, such as patrols the size of squads and platoons, generally fight mounted or avoid combat. Exceptionally, dismounted ambush methods are employed.

(3) Large bodies of horse cavalry usually maneuver mounted and fight dismounted. Cavalry uses the mobility of its horses to gain the advantage of surprise against the hostile flanks and rear, from which dismounted fire attacks can be employed effectively and decisively.

(4) Terrain may be the controlling factor. Where cover exists for a dismounted advance, losses are minimized. Conversely, where there is no cover, a quick mounted dash from a covered line of departure often results in fewer losses.

(5) Long mounted advances against troops in position, and mounted attacks against prepared positions or against troops in position and able to employ their combat power effectively, should not be made.

c. Mechanized elements.—(1) In the attack, mechanized cavalry units or any elements thereof may be employed on

separate missions under the control of the commander of the whole force; they may be attached to either or both the secondary attack and the main attack; or they may be given missions requiring cooperation with both elements of the attack.

(2) The mission of the scout car or motorcycle elements is primarily reconnaissance and security. They maneuver on the hostile flanks and rear to discover and give timely information of changes in hostile dispositions, primarily of movement of reserves.

(3) Prior to and during the attack, some vehicles may be retained for liaison to assist in the coordination of the main attack and the secondary attack.

(4) When the attack closes with the enemy, the vehicles may maneuver to assist the attack by fire from favorable terrain features, preferably on the hostile flank and rear. They may continue reconnaissance to give timely information of possible hostile counterattacks and to disorganize counterattacks by fire on the flank and rear.

(5) Light tanks of the armored troop usually are employed to assist the scout car and motorcycle elements in reconnaissance. They may be employed to assist the advance of rifle elements by making limited objective attacks to overrun or destroy hostile machine guns and other weapons.

(6) Scout cars and motorized units maneuver mounted and attack by fire power from the ground or from the vehicles. Armored troop units maneuver mounted and attack mounted or by fire from the vehicles, which may be either moving or stationary fire as situation demands.

■ 7. SURPRISE.—Surprise is one of the most important features of cavalry offensive action and should always be sought. Surprise may result from—

- a. Direction from which attack is made.
- b. Time of attack.
- c. Choice of mounted or dismounted action.

■ 8. RECONNAISSANCE.—Before a commander can engage intelligently his cavalry command in combat, he must have information upon which to base his actions. In order to gain this information he employs aviation, mechanized reconnaissance elements (scout cars and motorcycles), intelligence personnel, and reconnaissance detachments and patrols.

Before he decides on his scheme of maneuver for an attack, he should, whenever practicable, make a personal reconnaissance, with particular attention to the terrain. If possible, he should be accompanied by his immediate subordinate commanders. Reconnaissance is continued during combat and includes gaining information of the location and actions of the enemy and of the ground over which the forces may operate.

■ 9. SECURITY.—In the approach to the attack, Cavalry protects its front by the use of a covering detachment. During the approach and the attack, its flanks and rear are particularly sensitive, especially when opposed by a mobile enemy. All-around protection must be provided by proper utilization of the terrain, obstacles, combat patrols, antimechanized weapons, and the reserve. All subordinate units are responsible for the local protection of their own flanks. Any element of the command operating at such distance that the security provided by the higher commander is not sufficient must provide its own security groups.

■ 10. DIRECTION OF ATTACK.—Cavalry attacks either in one direction or in two or more converging directions.

a. The attack in one direction is the usual form of attack for subordinate units when operating as a part of a larger cavalry unit; it is the exception for units the size of a squadron or larger when operating alone. However, an opportunity may occur when these larger units by rapid action can attack in one direction to effect a penetration of any enemy line which is overextended and thinly held. Larger units may seize an opportunity for a surprise attack, mounted, against marching troops or formations not disposed in position.

b. The attack in two or more converging directions is the form usually employed in cavalry action. When this form of attack is used, the attacking force is generally disposed in three parts: a secondary attack, base of fire, or pivot of maneuver, about which the bulk of the command operates or maneuvers; a main attack or maneuvering force; and a reserve.

■ 11. ORDERS.—Cavalry attack orders usually are issued orally. They are issued to the assembled subordinate commanders, when practicable, at a point from which they can see the objective. When the attack is made in two or more

converging directions, orders usually are issued prior to the separation of the various elements of the attack. An order giving a mission to each unit of the command should always be issued. The orders are often given in fragmentary form for the purpose of saving time. Orders are issued sufficiently far in advance of the time of attack to permit subordinates as much time as possible for reconnaissance and for the preparation and issuance of their own orders. (See FM 101-5.)

■ 12. ZONES OF ACTION.—Zones of action may be prescribed when it is necessary to restrict subordinate units to certain lines or areas in order to prevent intermingling or confusion.

■ 13. OBJECTIVES.—Each attacking unit should be assigned an objective or objectives. These may be indicated by designating—

a. A decisive terrain feature.

b. Enemy reserves or other troops.

c. The enemy's flank or rear or both flank and rear. Generally this method is used when the enemy's main line of resistance is fairly well-determined but the location and strength of his reserves are not definitely known.

■ 14. TIME OF ATTACK.—a. When the command attacks in one direction, this may be indicated by prescribing a definite hour or by prescribing that the unit attack upon order of the commander.

b. When the command attacks in converging directions, this may be indicated by—

(1) Prescribing a definite hour for one or both elements. This method insures the best coordination of the attack and should be used whenever existing conditions render it feasible.

(2) A signal, visual or otherwise. This method may be necessary when conditions of terrain and the enemy situation are so vague or uncertain as to render the prescribing of a definite hour impracticable. When employed, care should be taken to insure that the signal prescribed can be understood.

(3) Making the time of attack of one element dependent upon the time or progress of attack of the other. This presupposes that the terrain over which attacks take place is clearly visible to one or both elements or that close liaison

exists. Such a method of time coordination may prescribe that one element attacks in conjunction with the other. This means that when it is clear that the attack of one element has been launched, the attack of the other is launched at the same time, or at such time thereafter as to bring the full weight of both attacks on the enemy at the same time.

(4) One or both elements being directed to attack as soon as in position. This partakes largely of the nature of a piecemeal attack, but frequently may be the only feasible method, due to difficulties of terrain or rapidly changing conditions in the enemy situation.

■ 15. APPROACH MARCH.—*a.* The approach march, prior to the launching of either a mounted or dismounted attack, should habitually be made mounted.

b. The formation adopted for the approach should be suitable to the type of action expected, permit rapid deployment to meet an unexpected encounter with the enemy, take advantage of covered approaches and terrain unsuited to mechanized attack where such threat exists, and minimize the danger from hostile fire. Formations must be widely dispersed so as to minimize losses from hostile aviation and from ground fire, both frontal and flanking. The commander designates the formation of the command. Subordinate commanders adapt their formations and immediate routes to existing conditions.

c. During the approach march, the commander, accompanied by such members of his staff and subordinate leaders as he may desire, rides well forward between the covering detachment and the head of the command, preparatory to making his reconnaissance for combat.

d. For methods of developing for an attack, location of, and procedure in assembly areas, and methods of coordinating and launching an attack, see FM 100-5 and paragraph 16 herein.

■ 16. ATTACK.—*a. Secondary or holding attack.*—(1) This force engages the enemy either by fire or by fire and movement for the purpose of providing fire support for the maneuvering force, of holding the enemy to the ground, of making him deploy prematurely or in a wrong direction, or of preventing him from reinforcing his front against the

main attack. The strength of the secondary attack varies, depending upon the plan of action, the nature and action of the enemy, and the terrain. It is given only sufficient strength to enable it to carry out the mission assigned. It should be strong in fire power, and is supported by, or has attached to it, all fire power which is not needed with the main attack.

(2) When, in the opinion of the commander, the terrain over which the secondary attack is to operate affords good cover for an advance, the secondary attack is given an objective and attacks as in any dismounted action. Terrain and the action of the enemy permitting, it works forward by fire and movement to an assault position from which to deliver a heavy fire on the enemy position to support the main attack. If the maneuvering force attacks mounted, the secondary attack makes its assault as soon as its fire is masked, and closes with the enemy to seize and consolidate the position and cover the reorganization of the maneuvering force or permit it to initiate pursuit. If the maneuvering force attacks dismounted, the secondary attack coordinates its assault with that of the maneuvering force.

(3) Exceptionally, when the secondary attack is confronted by terrain or obstacles which, in the opinion of the commander, make an advance from its attack position impossible without undue sacrifice, its advance may be delayed until the assault has been made by the maneuvering force. When the fire of the secondary attack has been masked by the maneuvering force, the secondary attack endeavors to move forward, dismounted or mounted, to mop up the enemy position and assist the maneuvering force in making complete the capture of the position. However, should conditions at any earlier time offer an unexpected opportunity for the secondary attack to advance, it pushes forward with aggressiveness and determination.

(4) The initial position selected should provide observation and a good field of fire of adequate size for the force involved from which to support the attack of the maneuvering force. In a meeting engagement, the advance guard, reinforced with such additional rifle or fire support elements as can be profitably employed, may make the secondary attack. In the event a more suitable position than the one held by the advance guard is available on the flank, troops assigned

to make the secondary attack move to that position and launch the attack. The advance guard may then be withdrawn to form a part of the secondary attack, constitute the reserve, or continue to attack from its original position. The movements of the main attack and the actions of the troops forming the secondary attack are coordinated as to the time of attack and the direction most favorable to success.

b. Main attack.—(1) The main attack is the decisive attack and contains the bulk of the command. It is supported by a preponderance of the available fire power of artillery, machine guns, and other weapons.

(2) When conditions are such that this supporting fire can be used effectively from a central position, it is retained under the control of the commander of the whole force. When its use may prove more effective under the control of the main attack commander, some or all of it should be attached thereto.

(3) The main attack provides its own security and moves rapidly by covered routes to the assembly area from which to launch the attack.

(4) It usually attacks dismounted but may attack mounted if the situation warrants, or by a combination of the two methods. Usually this is decided by the commander of the main attack after his personal reconnaissance upon arrival at his attack locality and a consideration of such elements as the mission, enemy dispositions, time, distance, and terrain. In exceptional cases, the commander of the whole force may prescribe the type of action, mounted or dismounted, to be employed by the main attack. If the enemy is surprised or presents an exposed flank or rear, if there are no obstacles to prevent mounted movement, or if the ground to be crossed is open, affording neither cover for the advance of dismounted troops nor for further maneuver, the decision may be to attack mounted. If the enemy is occupying a position in strength facing the direction of attack, or if the terrain furnishes good cover for advancing dismounted and is unsuited for rapid advance, the decision normally is to attack dismounted or to subdivide the command into a secondary attack, dismounted, and another maneuvering force, which in turn may attack mounted or dismounted after reaching the hostile flank or rear.

(5) When the main attack is made mounted, care is taken to insure that its attack is not launched prematurely. The launching of the main attack should be so timed as to receive full benefit from the efforts of the secondary attack exerted either by a heavy concentration of fire or by fire and movement to an assault position.

c. Reserve.—(1) A part of a command, the reserve, is held out of the fight initially for employment by the commander of the whole force in furtherance of his plan of attack or for use according to the development of the action. Its strength will depend upon the nature of the enemy and may vary from one-third to a small fraction of the command. Large reserves are held out against an enemy composed entirely of Cavalry or other highly mobile troops; small reserves against an enemy either lacking or weak in Cavalry or other mobile troops. Unless mobile troops are absent from the field of battle, the reserve should remain mobile in either mounted or dismounted attack. In the usual action of Cavalry against Cavalry, the reserve must be ready to act mounted without delay. In this case, fleeting opportunities for mounted attack may occur or the reserve may be needed promptly to repel rapidly developed or surprise attacks. When the enemy is without mobile troops there is less danger of surprise, but there may be opportunities in which the quick launching of the reserve in attack will produce decisive results. Its employment varies in accordance with existing conditions. As soon as the reserve is committed, a new reserve is organized without delay.

(2) The commander of the reserve keeps in close communication with the commander of the whole force while maintaining immediate control of the reserve.

(3) In emergencies, the commander of the reserve must not hesitate to act without waiting for orders. He maintains personal reconnaissance and keeps close contact with the attacking troops. He anticipates possible uses of the reserve and prepares tentative plans therefor.

(4) Before moving his reserve from any position, the commander of the reserve selects a new location, unless one has been designated by the commander, initiates reconnaissance of routes leading to the area, and decides on the method of reaching it.

(5) The reserve is usually echeloned to one or both flanks in a position from which it can best support the main attack or protect the flanks.

(6) When the assaulting troops reach the enemy or attain their objectives, the reserve is ready to take advantage of the situation to give an added impetus to the attack at a critical moment, to clinch the victory by pursuit, or to resist counter-attack. It may pursue a retreating enemy or occupy the ground captured. In case of the withdrawal of the assault troops, the reserve covers their withdrawal and reorganization.

d. Coordination of attack.—In order to obtain the maximum benefit from the concerted action of the secondary attack and the main attack, every available means must be utilized to insure coordination. This may include the designation of line of departure, zones of action, axis of signal communication, location of command posts, position of reserves, and other matters. Liaison is established and maintained between them. This may be done by the use of liaison agents, squads, or groups operating between the two, by mounted messengers, by radio, by pyrotechnics or other visual signals, by mechanized reconnaissance vehicles, or by motorcycles. As many means as necessary are used simultaneously to insure that liaison is continuous. When pyrotechnic or other visual signals are sent from the main attack, care is taken to withhold them until the attack is launched in order to avoid premature warning to the enemy of the impending attack. The object of such signal, especially in a mounted attack, is to notify the secondary attack to increase its fire temporarily and then to raise, shift, or cease its fire to avoid firing into the main attack. In the case of a combined attack, it may be necessary for the main attack to wait for a message or signal from the secondary attack to avoid the launching of the main attack before the secondary attack has advanced to the point where its full effect is being felt by the enemy.

■ 17. REORGANIZATION.—After an attack, whether successful or not, the commander reorganizes his command promptly preparatory to further operations.

■ 18. PURSUIT.—The attack order issued by the commander should prescribe limits of pursuit and an assembly point or points. The designation of a limit of pursuit is a measure of coordination prescribed by the force commander to fix the

limits for the action of subordinates and for keeping his command in hand for subsequent operations. Assembly points should be located within the limit of pursuit and where, as far as can be foreseen, the unit will be in the best position for future action.

■ 19. **CONTROL.**—Control of the action and of his subordinate units by a commander during the attack is difficult. He must rely to a great extent on the intelligent initiative of his subordinate commanders in carrying out his general plan. He exercises control through definite clear plans announced to subordinates, by utilizing all practicable means of communication, by making full use of his staff, by the direction of the fire of supporting weapons, by designation of assembly points and limits of pursuit, and by the use of his reserve at the proper time. When the command is divided into a secondary attack and a main attack, the commander usually goes to a position from which he can observe the action of both. He should at all times be in close communication with his command post and his reserve.

SECTION II

MOUNTED ATTACK

■ 20. **GENERAL.**—The horse elements of Cavalry constitute the principal force in the mounted attack. Mechanized elements assist the horse elements in the mounted attack by conducting reconnaissance of the objectives and routes of approach thereto. As the attack closes with the enemy, scout cars maneuver to assist the attack by fire from favorable positions or they may continue reconnaissance of the flanks and rear of the enemy to gain information of the movements of hostile reserves and to harass them. In the later stages of the attack, motorcycle elements may assist the efforts of the scout cars, continue reconnaissance of the hostile flanks and rear, or provide security for the flanks and rear of the attacking force. The armored troop may assist the scout car and motorcycle elements in reconnaissance or assist in the attack. When they are employed to assist the advance of assaulting elements, they usually cross the line of departure a few minutes ahead of the other assault elements. Their mission is to destroy hostile weapons within the zone of advance and facilitate an uninterrupted advance.

■ 21. ELEMENTS OF SUCCESS AND WHEN EMPLOYED.—For a mounted attack to be successful, most or all of the following conditions should exist: complete surprise, supporting fire, superiority in numbers, favorable terrain including covered routes to line of departure, limited objectives, thorough reconnaissance, and adequate security measures. These elements must be present to such a degree that the attack may be made without undue cost and with decisive results.

a. Surprise in mounted attack may be achieved by rapidity of attack, direction of attack, time of attack, use of terrain, or smoke, fog, partial darkness, and other conditions of low visibility. Results are most decisive when, in addition, the enemy is struck while in a formation or position ill-suited for resisting the attack.

b. Supporting fire must be sufficient to hold the attention of the enemy and prevent any effective employment of his available fire power.

c. The weight of the attack must provide superior numbers at the point of the assault. Speed, cohesion, and the effective use of individual weapons are essential.

d. Terrain must provide covered approaches for the maneuver and must present no important obstacles, such as wire entanglements, mines, entrenchments, numerous wire fences, impassable ditches, and sunken roads.

e. The objective should be definite and limited.

f. Thorough reconnaissance is essential.

g. Appropriate security measures must be observed during, before, and after the attack.

h. Special conditions under which mounted attack may be employed as a last resort are: desperate situations, such as, the necessary relief of hard-pressed troops when the sacrifice of mounted troops is justified, or when the mounted force is surrounded by a greatly superior enemy and the best chance of a break-through is by mounted action; situations in which other means have failed; and situations in which terrain is utterly devoid of cover for the dismounted advance.

i. Following the defeat and rout of hostile forces, speed and bold methods become essential. Mounted attacks are employed frequently. Enemy demoralization may justify disregard of the usual element of surprise, superiority in fire and numbers, terrain, and other factors normally considered es-

essential for the success of such an action. In pursuit the over-cautious leader is doomed to failure or meager success.

■ 22. FORMATIONS.—*a.* Formations for attack should be selected so as to meet each special situation. Influencing factors are: the degree of surprise attained, the nature of the objective, whether stationary or moving, and whether it consists of a mounted or dismounted force; the enemy formations, whether close or extended order; the nature and effectiveness of hostile fire and of friendly supporting fires; terrain; and visibility. The attack normally is disposed in depth. The number of lines depends on the terrain and the size of the force involved.

b. In the mounted attack by a squadron or larger force, while the formation for the command as a whole is prescribed in the attack order, the formations to be selected by subordinate units are usually left to the judgment of the respective subordinate commanders. If, however, the enemy situation is clear and units are not unduly separated, or if it is apparent that a high degree of coordination is necessary, the attack order may also prescribe the formations to be employed by subordinate units.

■ 23. TERRAIN.—Obstacles such as wire fences, deep ditches or gullies, streams, boulders, thick underbrush, marshy ground, or other hindrances which will hold up or disorganize the attack before the objective is reached must be avoided or passed by the use of proper formations. In the approach, available cover must be utilized to the maximum to increase the chance of surprise and lessen the effect of hostile fire. A change in formation may enable a command to take full advantage of cover when it might otherwise be greatly exposed.

■ 24. HASTILY PREPARED MOUNTED ATTACKS.—*a.* These actions are sudden and unforeseen. There is no time for prolonged preliminary reconnaissance. The latter must always be made by the leader, but it may be that a quick glance and a hasty survey of the situation must suffice. There is no time for deliberate deployments. The attack must be launched abruptly from any formation. A brief command or signal must suffice to launch the attack. Each subordinate unit is led by its commander. The personal example of leaders is most important in this type of hasty action.

b. The general rule is that any unit acting alone executes these attacks by launching its next smaller units successively. Normally when thus launched by a higher echelon the regiment attacks in line of squadrons or squadrons in echelon; the squadron attacks in line of troop column of platoons; the troop attacks in column of platoons. All attacking lines are deployed as foragers with approximately 100 yards between lines. Machine-gun units conform to the foregoing, the lines of foragers being composed of the men without pack animals, the packs following such lines at about 30 yards. Each unit when launched should be given an objective.

☐ 25. DELIBERATELY PREPARED MOUNTED ATTACKS.—Due to the unusual conditions essential for the success of the mounted attack (par. 21), deliberately prepared mounted attacks will rarely be made. In this type of mounted attack there is preliminary reconnaissance by the leader. There is sufficient time for the leader to issue detailed orders. Units are deliberately deployed; the designated weapons are drawn by command; the gaits are ordered; the pace is increased gradually; and the movement terminates with a charge at full speed over a short distance or sometimes by dismounting upon arriving close to the enemy and engaging him in his position. The attack is always supported by the fire of machine guns and any other available weapons.

a. *Dismounted enemy.*—(1) If the enemy is dismounted, his action is practically limited to the use of fire power. In attacking such an enemy, the object is to close with him in hand-to-hand combat with as few losses and as quickly as possible. The attack should be directed at the hostile flank and rear. The squadron or larger unit should attack in several successive lines of foragers with distances of approximately 100 yards between lines. The first echelon of two or more successive lines operates as "ride-through" lines to locate and engage hostile supports and reserves while the second operates as "mop-up" lines. Usually the leading echelon is given a frontage and direction of attack. Each echelon should be given its mission. The strength of each echelon is prescribed by the commander of the whole force. The formation of each echelon or the units within each may be prescribed by the higher commander or by the respective subordinate or unit commanders. In the case of smaller units which can attack in only two lines, both lines operate as ride-

through or mop-up lines in accordance with the strength and dispositions of the enemy. The reserve follows the attacking lines at such distance as to permit it to maneuver sufficiently to be able to assist either the ride-through lines or the mop-up lines, or to be otherwise employed by the commander in accordance with the developments of the situation.

(2) Units quickly reorganized, utilizing available cover, and promptly occupy the captured ground to repel an immediate counterattack. The rally and assembly should take advantage of available cover and defilade, and be accomplished in dispersed formation so as to avoid losses by fire from enemy units which may still be intact.

(b) *Mounted enemy*.—If the enemy is mounted and has effective supporting fire, an open formation should be used. The attack is launched in several successive lines, each either echeloned or maneuvered to the flanks so as to avoid being checked by or intermingled with the preceding lines in the *mêlée*. The hostile supports and reserves must be promptly located and attacked. The reserve follows in appropriate formation and at such distance as to permit freedom of maneuver and prompt support of the assault elements. It is essential that the successive lines rally promptly in order to charge again, either against the original enemy or new forces.

■ 26. MACHINE GUNS AND MORTARS.—*a. Heavy machine guns*.—(1) The heavy machine gun provides the principal supporting fire in the mounted attack. Every available gun should be in action, none held in reserve. More effective support will be rendered normally by heavy machine guns retained under central control. They are attached to subordinate units only when centralized control is impracticable. They do not take part in the assault. Their mission is to demoralize or break up enemy formations, to pin the enemy to the ground with fire, to support the mounted elements with fire, to protect their flanks, to cover the reorganization, to pursue by fire, to break up counterattacks, or to cover a withdrawal. To accomplish these missions they fire from one or both flanks or, exceptionally, use overhead fire. Some riflemen should be used to provide close-in protection.

(2) A mounted attack against a dismounted enemy may include a short fire preparation followed by a sudden launching of the attack, or a sudden opening of fire concurrent

with the launching of the attack, or both. Fire should be directed first on the whole enemy line and then concentrated on that part of his line to be assaulted. The fire should be as nearly as possible at right angles to the direction of attack. Overhead fire may be used if a suitable position 800 to 1,500 yards from the enemy and observation of strike can be obtained. The fire may be indirect if the range is accurately known, friendly troops can be seen, and strike is visible. When the mounted attack approaches the enemy, fire must be stopped or shifted to prevent losses. When the assault goes home, a portion of the heavy guns must move forward promptly to assist in the consolidation and to cover the reorganization.

(3) The mounted attack against mounted troops usually is hastily prepared. Any fire preparation will be concurrent with the mounted advance. Fire is opened as soon as possible and reaches its maximum intensity simultaneously with the launching of the attack. Some guns are directed at the enemy mounted elements while the remainder take under fire any hostile machine guns in action. Direct fire not overhead is normal. Concealment of guns is of secondary importance to rapid selection and occupation of position and delivery of fire.

b. Light machine guns.—Units which have no heavy machine-gun fire support in the mounted attack utilize their light machine guns to provide supporting fire according to the procedure outlined for the heavy machine guns. Available heavy machine guns may be supplemented by a portion of the light guns used in the same manner as the heavy guns, while the balance of the light guns follow the rifle units into the enemy position, prepare to pursue by fire, protect the reorganization of mounted units, and meet emergencies.

c. Caliber .50 machine guns.—Caliber .50 machine guns should be located to protect the flanks and rear of the command from attack by hostile armored vehicles. Some caliber .50 machine guns may accompany the troops making the mounted attack for use against such armored vehicles as may be encountered by these troops in the area in rear of the attack objective. In the absence of any hostile mechanized threat, caliber .50 machine guns are used as anti-machine-gun weapons.

d. Mortars.—In a deliberately prepared mounted attack, mortars are used to silence hostile heavy weapons during the preparatory fire and to fire on enemy supports and led horses. The fires of the mortars are coordinated for maximum effectiveness. Smoke delivered by mortars may be employed to blind hostile observation and heavy weapons in position during the early stages of the attack. In a hastily prepared mounted attack there is usually little time to locate and silence suitable mortar targets but every effort is made to do so.

■ 27. 37-MM ANTITANK GUNS.—Antitank guns are used in the mounted attack to provide protection from hostile mechanized attack, particularly from the flanks and rear. Their missions are coordinated with those of the caliber .50 machine guns. In the absence of any hostile mechanized threat the 37-mm guns are employed to destroy hostile machine guns.

SECTION III

DISMOUNTED ATTACK

■ 28. GENERAL.—*a.* Within the limits of its means, Cavalry fights dismounted in the same manner as Infantry. The underlying doctrine is the same, but the technique differs somewhat because of differences in organization, equipment, and armament.

b. As in the mounted attack, the horse elements of Cavalry, dismounted, furnish the main striking force while the mechanized elements assist them, generally in the same manner, as in the mounted attack (par. 20).

c. Dismounted Cavalry usually attacks for limited objectives; long dismounted advances are exceptional. It is not equipped, armed, or organized for long sustained action. Its attack is therefore characterized by comparatively limited preparation, rapidity of action, and fire power consisting of a relatively high proportion of machine-gun fire. The advance culminates in the assault in which rifles and pistols are used to overcome the last enemy resistance.

d. If necessary to move forward to successive positions, every advantage is taken of possible opportunities to resume the advance mounted. Accordingly led horses are kept as close to the assault echelon line as the situation permits.

e. A rifle platoon acting alone rarely attacks dismounted, except when operating on a security mission which requires it to attack. A rifle troop or a squadron may attack dismounted alone or as part of a larger force.

■ 29. **DEPLOYMENT.**—When a unit is operating alone or making the main attack of a larger unit, it should be disposed in some depth. When making a secondary attack it may have little or no depth.

a. *Squadron.*—The squadron generally deploys for the attack with an assault echelon (firing line and supports) and a reserve.

b. *Regiment.*—The regiment generally deploys in three echelons: the assault echelon, the squadron reserves, and the regimental reserve. The squadron is the attack unit. In situations requiring a relatively deep advance without a passage of lines or when strong resistance is expected, the deployment may be with squadrons abreast, each squadron being assigned a narrow frontage. When the enemy situation is not clear or when a passage of lines is anticipated, the deployment should be in column of squadrons.

■ 30. **STAGES OF ATTACK.**—The five successive stages of the dismounted attack are—

Approach.

Fire fight.

Assault.

Reorganization.

Pursuit.

■ 31. **APPROACH.**—a. *Conduct.*—(1) The approach is the advance, in open or dispersed formation, from the point where light and medium artillery fire is encountered to the point where effective small-arms fire is met. Unless threatened by enemy air attacks, the advance in route column is continued until necessary to deploy into a mounted approach formation in order to avoid losses from long-range fires. When threatened by or subjected to hostile air attack, a deployed approach formation is assumed at once. The mounted approach is continued as far forward as tactical safety and terrain permit; its termination is regulated by the availability of cover for led horses and the necessity for initiating the dismounted approach. The dismounted ap-

proach is continued until it becomes necessary to return the enemy's fire in order to advance.

(2) The approach formation should be one which puts units in position favorable for deployment for the attack and which reduces the vulnerability of the command to hostile air attack and artillery fire during the approach. Line of squad columns or half-squad columns with increased intervals reduce the vulnerability of the command to hostile air attack and artillery fire and also facilitate the passage of obstacles and the use of cover. The approach march should make use of the best covered routes available and should terminate on terrain that provides observation for supporting fires and cover for the final deployment. The termination of the approach march should be as far forward as hostile small-arms fire permits.

(3) The commander of the force may divide his command into units or combat teams and assign objectives and routes of approach to each. The development may be for a frontal or combined frontal and enveloping attack. Units pass from mounted to dismounted approach on orders of the next higher commander present.

b. Orders.—Commanders explain the situation to their next subordinate commanders during the mounted approach and announce—

(1) The initial formation, including designation of the base unit.

(2) The direction, route, or zone. (When a unit is divided into several attacking elements, a direction of march is assigned to each element.)

(3) Special security measures, including those to protect against hostile air and mechanized attack.

(4) Instructions to supporting weapons.

(5) Disposition of led horses.

c. Security.—(1) A mounted covering detachment precedes the unit during its mounted approach. This covering detachment continues to furnish forward security during the dismounted approach, advancing dismounted by bounds as directed and preceding the unit by 200 yards or more in accordance with the terrain and the size of the unit. It develops the enemy and protects the deployment for the fire fight. In a dismounted approach, not preceded by a mounted approach, a dismounted covering detachment is detailed. Pla-

toon scouts of the leading platoons maintain contact with the covering detachment during the dismounted approach. If the covering detachment becomes engaged, a new one is detailed, especially if the direction of advance is changed.

(2) Flank security is a responsibility of all commanders. Distant flank reconnaissance is provided by scout car patrols and by mounted patrols from the main body and reserve. If necessary, dismounted detachments may also be detailed from the reserve for flank protection. Necessary close-in flank protection for the assault is provided by small patrols from support units. Type of terrain determines the distances at which these local patrols operate; preferably they operate within 200 yards of their units.

(3) During the approach, measures are taken to protect the command from hostile mechanized or air attack. Such measures include: a carefully coordinated observation and warning system comprising reconnaissance elements, both ground and air; patrols and antitank units disposed on the flanks and rear; utilization of terrain unfavorable for attack by hostile mechanized elements and for observation by hostile aviation; and active defensive measures, such as the appropriate disposition and employment of antitank weapons against hostile mechanization and organic weapons against hostile aircraft.

d. Led horses.—Led horses are generally held mobile under cover. In the case of a large unit executing a dismounted attack to restore the front, they may be held immobile. At all times they must be in dispersed formations and under cover concealed against discovery from the air, even when on reverse slopes which are easily searched by enemy high-angle weapons.

e. Formations.—(1) In advancing to offensive combat, the command is deployed in open approach formations (deployment in width and depth with the units separated into small columns) when exposed to or liable to receive hostile aerial or ground fires. Approach formations must afford sufficient dispersion to minimize casualties, must be sufficiently flexible to insure control, and must take maximum advantage of the terrain. They should conform to and facilitate the expected scheme of maneuver for the attack.

(2) Organization in depth is provided by dividing attacking units into assault, support, and reserve echelons. A troop in

the attack invariably retains a support, usually one rifle platoon or less. The support follows the assault platoons as directed, usually at 75 to 150 yards. A unit the size of a squadron or larger habitually retains a reserve. A troop acting as part of a larger force does not retain a reserve. Acting alone it may retain a reserve, varying in strength from one rifle platoon to one rifle squad, depending on the obscurity of the situation and the mobility of the enemy. The reserve moves as directed by the commander of the force to which it pertains.

(3) Premature lateral deployments reduce flexibility and impair control. Thus rear units may delay their lateral deployments longer than leading units. Platoons are maintained in column of twos or line of squad columns as long as possible. Squads are only deployed into line of half-squad columns when necessary to do so. Distances and intervals depend on the size of the unit, hostile fire, visibility, and the terrain. Intervals are sufficient to permit deployment without losing contact or control. Distances fluctuate because of the movement by bounds; they are such that rear elements can render prompt support to forward elements without being unduly exposed to fires received by them. Excessive distances are more readily corrected than those which are too short. Subordinate leaders may vary their formations or deviate temporarily from the prescribed route in order to utilize cover, negotiate obstacles, and avoid fires, but must conform generally to the prescribed scheme of advance.

(4) Covered routes are used when available, with formations appropriate thereto. The cover of woods or broken terrain permits the use of less extended formations than when in the open; the difficulty of control in woods or broken terrain necessitates compactness and flexibility in the approach.

f. Control.—(1) Maintenance of direction is facilitated by designating a base unit. The direction is given to the covering detachment by personal instructions from the commander. All leaders must be well forward where they can best lead and direct their units, maintain the direction, and be available to receive the final attack orders. Communication is maintained by visual signals and messengers.

(2) When the covering detachments are stopped by enemy fire, they seize the most suitable terrain feature for a line of departure for the fire fight. When time permits, leaders of advancing units are assembled by the commander on or near the line of departure to receive the final attack order. The order outlines the procedure to be followed and designates objectives, routes, or zones to the units.

■ 32. FIRE FIGHT.—*a. General.*—The command is deployed for the fire fight when necessary to use the close supporting and accompanying fires of auxiliary automatic weapons to continue the advance. The line of departure for the fire fight should be made on ground favorable for continuing the advance by *fire and movement* (close supporting fires of automatic weapons and the rapid maneuvering of rifle and at times light machine-gun units). The fight may vary from a deliberate to a hastily prepared attack. Deliberately prepared attacks afford opportunity for reconnaissance, for the application of supporting fires, and for coordination of the attack. Hastily prepared attacks afford little opportunity for reconnaissance or coordination of the attack.

b. Security.—(1) After protecting the deployment for the fire fight, the covering detachment is usually passed through by the assault units. It is then re-formed as a tactical unit and used as directed.

(2) Platoon scouts furnish forward security for the assault platoons in the actual fire fight.

(3) Flank security is a responsibility of all commanders. It is provided by observation, reconnaissance, and fire. Support platoons on the outside flanks maintain small flanking patrols when necessary. The distance at which these patrols operate depends on the terrain; preferably they are restricted to distances which will permit voice or visual communication with their unit. Reserve units further extend this flank reconnaissance by mounted or dismounted patrols. Supporting weapons may augment flank protection by defensive files.

(4) Security from hostile mechanized and air attack is provided as described in chapter 5, sections IX and X.

c. Scheme of maneuver.—The plan must be simple. This entails fixing the enemy by fire, maneuvering to seize controlling terrain features, and closing with the enemy to

destroy him. Size of the unit, mission, terrain, and enemy dispositions dictate the selection of the plan of attack.

d. Conduct of fire fight.—(1) It is necessary to depend largely on supporting weapons for fire support and to utilize the best cover available for advancing the maneuver units. This involves the intense application of supporting automatic fires and the rapid maneuvering of rifle units. Terrain determines how the combination is best employed. A long-range indecisive fire fight is avoided. Every effort is made to withhold rifle fire of the assault units until within practicable combat range of the objective (preferably less than 350 yards).

(2) After the fire fight has started, conduct of the advance is in the hands of the leaders of the assault platoons. Higher commanders influence the action by the application of supporting fires and by committing support and reserve elements. Platoon leaders maintain tactical control by coordinating the advance of their squads and by reorganizing their platoons when possible to do so.

e. Attack formations.—(1) *Holding and enveloping.*—In the attack, the assault echelon is usually divided into two elements, wherein one element executes a holding attack and the other an enveloping attack.

(a) The squadron acting alone is normally disposed with one troop executing the holding attack, one troop executing the enveloping attack, and the third troop in reserve. The troop executing the holding attack may be disposed with three rifle platoons (less part of one platoon in support) in the assault, or with two rifle platoons in the assault and one in support. The troop executing the enveloping attack is usually disposed with one or two rifle platoons in the assault and the remainder in support.

(b) The troop acting alone is normally disposed with one platoon executing a holding attack, one platoon executing an enveloping attack, and the third platoon in reserve. The platoon executing the holding attack is usually deployed with all three squads in the assault; the platoon executing the enveloping attack may be deployed with two squads in the assault and one in support.

(2) *Deployment.*—Frontal attacks may be employed against an inferior enemy or to seize a limited objective, but are resorted to only when time or the terrain necessitates this type of attack. Wide deployments with little depth may be

used. A squadron may deploy with three troops (less part of one troop in reserve) in the assault. A troop may deploy with three rifle platoons (less part of one platoon in support) in the assault. Assault platoons may deploy with three squads in the assault, or with two squads in the assault and one in support.

(3) *Units attacking as part of larger force.*—The unit attacks in accordance with its assigned mission. Each commander prescribes the formation of his own unit in accordance with the situation that confronts him and within the limits prescribed by higher authority.

f. Frontages.—Frontages in the attack are regulated by the mission, terrain, and enemy dispositions. A platoon operating in small groups and covering the intervals by fire may usually be held responsible for a frontage in the attack of 75 to 150 yards. The frontage of a troop or squadron depends on the number of platoons deployed in the assault echelon.

g. Troop leading.—(1) *Squadron acting alone.*—When the covering detachment gains contact, the squadron is halted under the best available cover. The squadron commander, accompanied by his separate unit commanders, goes to the nearest observation point, receives available information from the covering detachment, makes a hasty reconnaissance, decides on his general plan of attack, and directs the development of the squadron for the attack. He directs the establishment of supporting fires (if available). He then indicates the situation on the ground and issues the attack order. The squadron commander is located well forward where he can observe closely the progress of the assaulting troops and the effect of supporting fires. After committing the troops, the squadron commander influences the action by: assuring maximum use of supporting fires; insuring mutual cooperation between assaulting troops; providing security measures (especially flank and rear protection and defense against hostile mechanization); and committing his reserve when needed.

(2) *Assault squadron as part of regiment.*—When contact is gained, the squadron is halted under the best available cover as directed by the regimental commander. The squadron commander usually directs the development of the squadron before he receives the attack order, in accordance with advance information from the regimental commander. He

directs his separate unit commanders to meet him at a forward observation point, to which he goes after receiving the regimental attack order. Thereafter, the attack of the squadron is conducted as explained for the squadron acting alone, with the exceptions that opportunity for maneuver is more restricted; supporting fires may be requested from the regiment; mutual cooperation with adjacent squadrons is insured; and the regimental commander is kept informed of the progress of the attack.

(3) *Rifle troop acting alone.*—The attack is conducted in a manner similar to that of the squadron acting alone, except that reconnaissance is briefer and the troop is developed more rapidly. Orders are issued orally to the assembled platoon commanders at a point where the situation can be indicated on the ground. The position of the troop commander is well forward where he can observe closely the assault platoons. After committing his troop to the attack, the troop commander influences the action by insuring close supporting fires of the light machine gun platoon, if the guns are not used as accompanying weapons in the firing line; using his light machine gun fire to assist the advance of less advanced adjacent troops; assuring mutual cooperation between assaulting platoons; providing needed security measures (stressing flank protection); maintaining the direction of the attack; and committing his reserve when needed. When there is no time for reconnaissance or for coordination of the attack, the platoons are usually committed to the attack by commands and combat signals.

(4) *Assault troop as part of squadron.*—This unit is committed to the attack in a manner similar to that explained for the squadron as part of the regiment, except that the troop is developed more rapidly. The conduct of the attack for the troop acting as part of the squadron differs from that of the troop acting alone in the following particulars:

- (a) The opportunity for maneuver is more restricted.
- (b) Supporting fires of heavy machine guns and mortars may be requested.
- (c) Mutual cooperation with adjacent troops must be insured.
- (d) The squadron commander is kept informed of the progress of the attack.

(5) *Assault platoon as part of troop.*—When contact is gained, the platoon is halted under the best available cover as directed by the troop commander. Before going forward for the troop attack order, the platoon commander directs the platoon sergeant to develop the platoon as directed by the troop commander and to have the squad leaders meet him at an indicated point for the platoon attack order. After receiving the troop order, the platoon commander indicates the situation on the ground to the squad leaders and issues the platoon order.

h. Support platoon.—The support platoon is the element with which the troop commander influences the fire fight by maneuver. It is used as a unit, not in driblets. It follows the assault platoons by bounds under best available cover in appropriate formations, generally at about 100 to 200 yards—close enough to afford quick support without being involved prematurely in the combat of the assault platoons or exposed to fires received by them. When two platoons are held in support, the rear platoon follows as a third wave, following the second platoon at 100 to 150 yards. The support platoon commander maintains close contact with the troop commander. The following missions of the support platoon are included:

(1) *To reinforce assault platoons.*—When ordered, the platoon moves to a position in the line. It is better to extend the line than to merge the support platoon with units already engaged.

(2) *To occupy gaps in line.*—Initiated as in a normal approach. The platoon leader maneuvers to approach the gap directly from the rear.

(3) *To protect flanks.*—Small patrols are sent to the exposed flank, and the platoon is prepared to extend the attack or to occupy a position on that flank.

(4) *To assist adjacent units.*—The support platoon may be used to attack in flank or rear the enemy resistance which is holding up the advance of adjacent units.

i. Reserve units.—(1) The reserve is a force held out by the commander to meet developments of the action. A squadron invariably retains a reserve, usually one rifle troop. The troop acting alone usually retains a reserve of one platoon. The reserve is moved by bounds from one covered position to another by the commander of the force to which it per-

tains. The distance at which the reserve is held in rear of the assault echelon depends on the cover available and the size of the unit. It should be held as close to the assault echelon as is consistent with safety, control, and probable employment. The reserve commander must be constantly familiar with the situation and in close contact with the commander. The reserve is committed at critical stages. Its missions include the following:

(a) To continue the attack or to envelop resistance developed by the assault units.

(b) To assist adjacent units.

(c) To protect the flanks and rear and repel counter-attacks.

(d) To furnish special patrols as needed.

(e) To furnish ammunition carrying parties and other details for the assault units.

(2) After original reserves have been committed, new ones are formed, usually from depleted assault units whose functions have been taken over by former support and reserve units.

j. Assisting adjacent unit.—(1) Assistance is best rendered by pushing forward rather than by switching fires. The advancing unit pushes forward to expose the flanks of the enemy resistance. Support or reserve elements of the penetrating force then attack the flank or rear of the enemy resistance. Advancing units switch their fire only when necessary for their own flank protection or to support their own attack against this resistance.

(2) With the approval of the next higher commander, units whose advance has been held up may sometimes side-slip and temporarily follow an adjacent unit whose progress is not held up.

k. Continuation of attack when advance is held up.—The normal procedure for continuing the attack includes—

(1) Reorganization of assault units.

(2) Concentration of all available supporting fires.

(3) Resumption of maneuver to seize controlling terrain features.

(4) Committing the necessary support and reserve units.

■ 33. DUTIES OF LEADERS IN FIRE FIGHT.—*a.* The squadron commander—

(1) Assigns combat missions to each troop and separate unit of the squadron.

(2) Controls the actions of his supporting weapons.

(3) Calls for additional fire support when needed.

(4) Maneuvers his reserve.

(5) Cooperates with and maintains liaison with adjacent squadrons.

(6) Provides flank and rear protection.

(7) Maintains direction and impulsion of the attack.

(8) Keeps the regimental commander informed.

b. The troop commander—

(1) Assigns combat missions to each platoon.

(2) Controls the actions of his light machine-gun platoon.

(3) Calls for additional fire support when needed.

(4) Maneuvers the support platoon.

(5) Cooperates with and maintains liaison with adjacent troops.

(6) Provides flank protection if necessary.

(7) Maintains the direction and impulsion of the attack.

(8) Forwards ammunition to assault platoons and light machine gun platoons when required.

(9) Keeps the squadron commander informed.

c. The platoon commander—

(1) Assigns combat missions to each squad.

(2) Controls the action of the light machine-gun squad (when attached).

(3) Cooperates with and maintains liaison with adjacent platoons.

(4) Observes the enemy and effect of fire.

(5) Provides flank protection if necessary.

(6) Maintains direction and impulsion of the attack.

d. The squad leader—

(1) Assures that each man knows his functions in the squad.

(2) Prescribes squad methods of advance.

(3) Selects firing positions.

(4) Assigns targets.

(5) Issues fire orders.

(6) Controls the actions of the light machine gun (if attached).

(7) Observes the enemy and effect of fire.

(8) Redistributes ammunition when necessary.

■ 34. MACHINE GUNS AND MORTARS.—Prompt application of supporting fires is essential. Machine guns are placed in action early unless surprise fire is desired.

a. Heavy machine guns.—(1) To facilitate control and supply, the heavy machine-gun troop is preferably used as a unit, although its separate platoons may be widely disposed. When conditions do not favor such use, platoons may be attached to squadrons attacking as part of the regiment. Platoons are generally attached to detached squadrons.

(2) Firing missions and the general location of initial firing positions are assigned by the commander to whose unit the guns are attached or assigned. Heavy machine guns are preferably sited on commanding ground from where the main effort can receive the earliest and most continuous support. A flank position best fulfills these conditions, as a line of fire at a wide angle to the direction of attack permits the delivery of enfilading fire not quickly masked by the advancing rifle units. Commanding ground permitting effective overhead fire may permit siting the guns without such wide displacement to the flank. Units attacking as part of a larger force are often restricted in the selection of machine-gun positions. It may then be necessary to arrange to locate machine guns in the zone of an adjacent unit.

(3) Heavy machine guns are normally used in general support, primarily to support the assault echelon; secondary missions include fire on enemy assembly areas and fires to cover flanks and gaps in the line. Targets are engaged based upon orders from the commander of the whole force, observation of the machine gun commander, and requests from assault troop commanders. Direct fire is used in preference to indirect fire. Overhead fire is practicable, safety factors permitting. The guns are displaced forward as the attack progresses. Squads, sections, and platoons are echeloned forward by bounds to insure constant support. Movement of 400 yards or more is made in pack when practicable.

(4) Protection for the heavy machine guns is a vital responsibility of the commander to whose unit the guns are attached or assigned.

b. Light machine guns.—(1) The light machine-gun platoon may be used as a fire unit for close support of the troop; light machine-gun squads may be attached to rifle pla-

toons; or light machine guns may be attached to rifle squads for use as accompanying guns in the firing line. This use may be obligatory due to the lack of favorable ground for close supporting fire. The light machine-gun platoons of a squadron may sometimes be grouped as a fire unit where the terrain affords suitable commanding positions.

(2) The effective range of the light machine guns (1,200 yards) assures a flexible volume of fire for engaging targets in the immediate sphere of action of the troop and capable of supplementing other supporting fires. When the light machine-gun platoon is used as a unit, initial firing positions and missions are normally assigned by the troop commander. Thereafter, in the absence of further instructions, the light machine-gun platoon commander directs the forward displacement of the guns by echelon to insure continuity of fire support and quick reinforcement of the captured position.

c. Caliber .50 machine guns.—Generally caliber .50 machine guns are disposed in detachments. Platoons or sections may be attached to separated squadrons, and sections or squads to isolated troops. They are disposed in width and depth to protect the front, flanks, and rear against enemy mechanized vehicles; they may be used for antimachine-gun fires when no enemy mechanized threat is present.

d. Mortars.—Mortars are held under regimental control or attached to squadrons. They are employed for anti-machine-gun fire and for fire on enemy supports or led horses.

■ 35. ASSAULT.—*a. General.*—The assault is that phase of the attack wherein assault units close with the enemy. It is delivered at the earliest moment that promises success. Platoon leaders are on the alert to sense this critical moment and promptly launch the assault, or the assault may be initiated spontaneously as a result of the enthusiasm of the attacking troops. While troop commanders seek to impel its delivery, the actual launching of the assault is not specifically directed by the higher commander. The influence exerted by the latter at this stage of the attack is largely confined to that obtained by his action in committing the reserve.

b. Conduct.—(1) Against a stubborn enemy, it is necessary to secure fire superiority or to seize controlling terrain fea-

tures (preferably both) before delivering the assault. The assault is launched when within assaulting distance and conditions warrant it. The term "assaulting distance" is an elastic one. It may be any distance within 300 yards, as determined by terrain, visibility, and enemy resistance. The support elements are usually committed at this time, if not already committed. The reserve is used if necessary. Men in the assault platoons advance rapidly, firing at targets directly opposing their advance. Marching fire may be used to advantage. Pistols, clubbed rifles, and grenades are used in close combat.

(2) If the assault units are held up, all available supporting fires are brought to bear, units are reorganized to resume the assault, and some units are detailed to maneuver for the seizure of controlling terrain features or points in the hostile rear.

■ 36. REORGANIZATION.—Reorganization is undertaken more frequently in smaller than in larger units. Squads reorganize during lulls in the action when cover permits; platoons and troops reorganize on intermediate and final objectives; squadrons usually do so only after reaching the final objective. Contact with the enemy must not be lost during the reorganization.

■ 37. *Duties of leaders in reorganization.*—*a.* The squadron commander—

(1) Insures reorganization of each troop and separate unit of the squadron.

(2) Disposes the squadron in accordance with the plan for future action.

(3) Initiates and maintains reconnaissance to the front and flanks and establishes contact with adjacent units.

(4) Directs the placing of supporting weapons (if attached).

(5) Initiates replenishment of ammunition.

(6) Informs the regimental commander of the disposition and status of the squadron.

b. The troop commander—

(1) Insures reorganization of troop headquarters and each platoon.

(2) Regroups and disposes platoons in accordance with the plan for future action.

(3) Establishes reconnaissance to front and flanks and establishes contact with adjacent troops.

(4) Directs the placing of light machine guns.

(5) Provides for ammunition replenishment.

(6) Informs squadron commander of disposition and status of the troop.

c. The platoon commander—

(1) Replaces key men where necessary.

(2) Regroups and disposes squads in accordance with the plan for future action.

(3) Maintains observation and reconnaissance to the front and flanks.

(4) Directs the placing of light machine guns (if attached).

(5) Collects and distributes ammunition.

(6) Informs the troop commander of disposition and status of the platoon.

d. The squad leader—

(1) Replaces scouts and squad second-in-command where necessary.

(2) Redistributes ammunition.

(3) Reports squad disposition to platoon commander.

(4) Directs the placing of the light machine gun (if attached).

■ 38. PURSUIT.—*a. General.*—The energetic pursuit of a defeated enemy insures decisive results. Attacking units pursue by fire as long as the retreating enemy is within effective range. Assaulting troops and squadrons send patrols forward to cover their reorganization and to maintain contact with the retreating enemy. Pursuit must be initiated promptly before the enemy can reorganize or redispense his forces.

b. Coordinated pursuit.—This is a carefully planned operation which takes the form of direct pressure combined with an encircling maneuver and is therefore confined to larger forces. Direct pressure is maintained by units already in contact. An encircling force, made up of reserve or support units least engaged, is promptly organized to operate by envelopment directed against the head of the retreating column or against a vital locality in the enemy's rear. The encircling forces invariably operate mounted and may comprise horse, porté, and mechanized cavalry elements. (See sec. IV.)

SECTION IV

PURSUIT

■ 39. GENERAL.—*a.* An energetic pursuit of a beaten enemy is the only means of obtaining complete victory and decisive results. Pursuit is initiated as soon as possible after it becomes apparent that the enemy is retreating. Pursuing troops exert direct pressure on the enemy to prevent his making a stand and conduct an encircling maneuver to cut him off and destroy him. (See FM 100-5.)

b. Cavalry pursues defeated enemy motorized and mechanized troops as well as foot and horse troops.

c. In the pursuit of enemy foot and horse troops, Cavalry is used both in direct pressure and in the encircling maneuver. The direct pressure is exerted by horse elements and the encircling maneuver by both mechanized and horse elements, including porté.

d. Cavalry pursues defeated motorized and mechanized troops by—

(1) Using its own mechanized elements to gain the heads of retreating columns at defiles and delay them until the arrival of horse elements.

(2) Using porté horse elements, in addition to mechanized elements, to keep pace with and encircle the enemy.

(3) Taking advantage of shorter routes than those available to the enemy to intercept him at defiles.

(4) Making better actual speed across rough terrain than is possible for enemy motorized troops forced to use the same terrain.

(5) Outdistancing enemy motorized and mechanized units which have been slowed down due to weather conditions, congestion on roads, or destruction of roads or bridges, and as a result of the action of harassing detachments especially detailed for this purpose.

■ 40. FORMS OF ACTION.—*a.* The form of action employed by Cavalry in pursuit may involve any form, or combination thereof, from the occupation and defense of a position in the direct path of hostile retreating columns to the mounted attack.

b. It may result in only one form of action, several different forms of action in succession, or different forms of action by various elements of the pursuing command.

c. The form of action employed should be suited to the local terrain and the enemy situation at the time.

■ 41. PLANS AND ORDERS.—*a.* Pursuit must be carefully planned and executed in order to be successful.

b. The cavalry commander formulates and keeps up-to-date plans and orders for the cavalry pursuit. These plans must conform to the pursuit plans of the higher commander, if known; otherwise they conform to the situation as known to the cavalry commander.

c. The commander of a cavalry force anticipating pursuit must be fully informed as to the terrain and the important tactical and strategical points on the enemy's probable lines of retreat and routes leading thereto.

d. In pursuit, the cavalry commander may properly extend the latitude of action of his subordinate commanders. Under such circumstances, he keeps his subordinates constantly informed of the situation and general plan of operations in order that they may act intelligently in carrying out the general plan.

■ 42. CONDUCT.—*a. General.*—(1) When the enemy is retiring in an orderly manner, repeated harassing attacks by fire are usual. After demoralization of the hostile forces has set in, mounted attacks become more and more frequent and, through them, maximum captures of men and material are obtained.

(2) It is the duty of the Cavalry to devote every man it possesses to the pursuit and to press it to the limit of endurance of men, animals, and vehicles.

b. Direct pressure.—(1) Cavalry is used in direct pressure when it is acting alone and when, the enemy being motorized, conditions do not permit the Cavalry to reach the heads of retreating enemy columns.

(2) Some mechanized cavalry elements may be a part of the force exerting the direct pressure. In this case they maintain contact with the rear guards of the retreating forces and conduct reconnaissance of the hostile flanks to gain information of the progress of the hostile retreat. They may harass the flanks to delay hostile reorganization and withdrawal. Armored vehicles may be employed to attack hostile covering forces that interfere with the advance of the force exerting the direct pressure.

(3) Corps and division cavalry is sent forward to maintain contact and to exert a constant pressure in order to prevent the enemy from forming his columns and starting an orderly retreat. The tactical mobility of Cavalry makes it especially valuable for outflanking enemy covering detachments, or going through the gaps between them to attack the main body in flank and rear. The Cavalry of a flank infantry division or corps often may have considerable freedom of maneuver for turning movements against the enemy's covering forces or rear guards.

c. Encircling maneuver.—(1) Cavalry is used in the encircling maneuver when the enemy consists primarily of foot and horse troops. Against motorized or mechanized troops, Cavalry is used in the encircling maneuver when conditions permit it to outmarch them.

(2) While the direct pressure is taking place and at the earliest practicable moment after it has been decided definitely to pursue, Cavalry is dispatched in the encircling maneuver.

(3) The mission of the encircling cavalry is to check the retreating columns until they can be overtaken and destroyed by the troops which are following directly. Accordingly, the objective of the encircling force should be a vital point in the enemy rear, seizure of which will definitely halt the enemy retreat. Where this is not practicable, the nearer to the heads of the retreating columns the encircling maneuver strikes, the more effective is the delay and the better the chance of destroying the whole hostile force.

(4) The march of the Cavalry engaged in the encircling maneuver is so conducted as to reduce to the minimum the possibility of interruption by hostile flank detachments and is directed at some point or area suitable to the launching of operations against the retreating forces. For example, a river line or strong defensive position across the enemy's line of retreat, or defiles through which the enemy must pass, may vitally influence the operations. Hostile cavalry, when encountered, is attacked and dispersed or driven back; or, if this is impracticable, the hostile cavalry is contained by a detachment while the main body of the pursuing cavalry continues on its mission. Nothing is allowed to interfere with the rapid advance of the main body of the encircling

cavalry and its eventual success in cutting off the retreating enemy.

(5) The encircling maneuver may be initiated by launching the pursuing cavalry from a location well off on a flank of the field of battle, or by launching it through a wide gap in the enemy's lines. In either case, the pursuing cavalry moves rapidly and directly on the objective. It may reconnoiter to report the location, strength, disposition, and movement of any hostile forces that can interfere with the march of the encircling force. It may be directed to the hostile flank and rear to harass and delay hostile reorganization and withdrawal, or it may be sent to critical terrain features, such as bridges and defiles, on the routes of the hostile retreat to block hostile withdrawal. Mechanized cavalry elements holding such key positions should be reinforced promptly by more suitable ground-holding troops.

(6) During the advance of the encircling force, mechanized cavalry elements provide reconnaissance and security to the front and to the flanks. Mechanized elements may precede the remainder of the encircling force for the purpose of seizing critical points on the enemy routes or on the route of the encircling force. Upon arrival of an encircling force of all arms at its destination, these elements continue reconnaissance and delay the retreating columns by harassing attacks and by performing demolitions.

(7) The principal mission of the cavalry component of an encircling force of all arms is to secure the uninterrupted advance of the other elements of the force. When such a force is motorized, the horse elements of the Cavalry should be transported by motor. Porté horse cavalry may remain with the main force during its advance or may precede it under cover of advance mechanized elements. Upon nearing the area from which the encircling force will take position to block retreating hostile columns, the horse cavalry detrucks, performs reconnaissance, security, and delaying and harassing missions or participates in the decisive attack.

■ 43. MACHINE GUNS AND MORTARS.—Both light and heavy machine guns in the direct pressure are used as in attack. The guns with the encircling force are used as in defense or attack, depending on the type of action used by the encircling force. In both cases they must be used boldly and by direct fire.

Caliber .50 machine guns and mortars are used in accordance with their characteristics; the former against enemy mechanized elements, and the latter primarily against machine guns or any defiladed targets. However, since the object of the pursuit is to disorganize the enemy, both types of weapons should be used against any remunerative target which is presented.

SECTION V

EXPLOITATION OF BREAK-THROUGH

■ 44. GENERAL.—*a.* A break-through is a penetration of the entire depth of a defensive system into unorganized areas in rear. The operation is only a means to an end. The end is the exploitation of the penetration. This may include operations against the flanks and rear of the defensive system, against the hostile reserves in the open, or against the enemy's lines of communication and rear installations. It may include the seizure of key terrain to block hostile reinforcements or to cut off or check hostile withdrawal.

b. A cavalry force consisting of both horse and mechanized elements is well-suited for the exploitation phase of a break-through. It may be used either alone or in conjunction with other forces.

■ 45. METHODS.—*a.* The successful exploitation of a break-through consists in passing the exploiting force rapidly through the gap and maintaining it thereafter so that it can carry out the missions assigned. This requires careful planning, a force strong enough to maintain itself in the face of strong counterattacks by the enemy's reserves, and vigorous action against the flanks of the gaps. The exploitation, although difficult to organize and execute, when well conceived and carried out produces far-reaching and decisive results.

b. In assigning missions to an exploiting force of all arms, full use should be made of the tactical mobility of Cavalry. The Cavalry should be directed toward those important objectives which must be secured promptly and which cannot be reached rapidly by motorized or armored forces. If the exploiting force consists primarily of horse and foot troops, security is provided by the rapid advance of the Cavalry, behind which the Infantry of the exploiting force moves

forward at its maximum rate. If the exploiting force is headed by armored and motorized units, Cavalry followed by Infantry widens the breach to both flanks as the advance continues.

c. The cavalry commander must have complete information of the enemy, including the latter's possible reaction and the hostile forces that probably will be encountered. He should be informed of the part the assigned mission plays in the higher commander's plans. This is essential in order that he may take advantage of changes in the situation and, when necessary, change his plan to further the success of the whole.

d. The cavalry commander receives orders as to when he will advance, or he is allowed to move upon his own initiative when certain conditions are fulfilled.

■ 46. PLAN.—The plan must be simple. It contains a general scheme and the necessary details for the accomplishment of the assigned mission. It should assign a definite mission to all the elements of the command and provide for—

a. Keeping the assembly of the Cavalry secret from the enemy.

b. Mutual support.

c. Passing rapidly through the gap, including the use of necessary guides.

d. Rapidly overcoming hostile resistance.

e. Thorough reconnaissance of the roads or paths, through the gap, of the terrain over which the Cavalry will operate and of the enemy. This usually makes necessary the use of reconnaissance detachments.

f. Security of the Cavalry at all times against both ground and air attack.

g. Marching rapidly upon the assigned objectives.

h. Keeping detachments to the minimum and retaining the major portion of the Cavalry under the immediate control of the cavalry commander.

i. Close liaison between all units of the Cavalry.

j. Utilizing resources of the country and capturing supplies to the utmost.

■ 47. MACHINE GUNS.—In the exploitation of a breakthrough, both light and heavy machine guns march well forward in the column, help drive off small enemy delaying

forces, and are employed as outlined for their use in attack when main enemy forces are encountered. Opportunity for direct fire at suitable ranges is sought. Caliber .50 machine guns and mortars are used in their specialties and also against other targets if needed.

SECTION VI

ATTACK AGAINST RIVER LINE

■ 48. GENERAL.—*a.* The term "river line," when so used, signifies the water's edge on the defender's side of the river.

b. Cavalry cannot be expected to force a river crossing against strong opposition without the assistance of additional supporting and auxiliary troops.

c. Cavalry uses its mobility to move to points along the river front which are undefended or weakly guarded, and to cross there to strike the defender in flank or rear. When opposition cannot be avoided, it effects a crossing by attacking with fire combined with dismounted maneuver, in accordance with doctrines outlined in FM 100-5.

d. Cavalry units cross the river by fording, swimming, or ferrying, under protective fire, and establish a bridgehead.

e. Feints are made at several points. The main effort is made where a bridge, ford, or ferry exists or can be improvised or installed.

f. Horse elements of Cavalry take advantage of their cross-country and swimming ability to effect river crossings.

g. Mechanized elements of Cavalry are restricted in river crossings by their inability to cross streams of a depth greater than 2½ feet for scout cars and 3½ feet for light tanks. The condition of the river bottom and banks also has a direct bearing on their ability to cross.

h. After the cavalry commander has decided upon the places to cross, mechanized reconnaissance elements may be sent to continue or resume reconnaissance of the hostile forces. They cross the river by utilizing such bridges, not protected by the enemy, as may exist on the flanks of the opposing forces. They conduct reconnaissance to locate the hostile reserves and artillery.

i. When the crossing is opposed, the attack against a river line requires superiority on the part of the assailant and thoroughness in planning and preparation, since the river

tends to disorganize and disperse the strength of the attacking force.

j. Depending on the situation, the attack may turn, envelop, or penetrate the hostile position. In order to disperse the defender's strength and deceive him as to the point of the main attack, Cavalry usually makes a feint or secondary attack at one or more points, while the bulk of its force crosses at some other selected point or points. Such a scheme of maneuver is merely an adaptation of the typical maneuver attack of Cavalry. If the maneuvering force meets with appreciable opposition, it endeavors to continue its maneuver until it has so dispersed the defending force that the crossing can be made with a minimum of combat.

■ 49. **TERRAIN.**—When the crossing must be made against hostile resistance, terrain has a decisive influence on the points selected for crossing. It should provide covered approaches to the river and commanding terrain for artillery observation, machine-gun support on the attacker's side, and a minimum of cover for the defender. The river banks should facilitate the operations of entering the river and landing on the opposite side. Narrow points in the river and shallow water near the banks are desirable. River bends which form salients toward the attacking force favor concentration of frontal and flanking fire on the defender. However, such salients restrict the maneuver of troops after crossing and may necessitate a frontal attack against any enemy position encountered at the base of the salient. The terrain on the defender's side should afford a suitable bridgehead position, the capture of which would deny artillery observation to the enemy, afford protection for the crossing of the remainder of the command, and provide adequate maneuver space for the development of the whole command for the attack following the crossing.

■ 50. **MAJOR OPERATIONS.**—*a.* Engineer troops, organically part of any large cavalry unit, are available for river crossing operations of the latter. The attachment of engineers to smaller units depends entirely upon their availability and the obstacle that the stream presents. Every effort should be made to attach ponton engineers with equipage to Cavalry negotiating the crossing of an unfordable stream. Thorough coordination with organic or attached engineers should be

obtained by the judicious consideration of the recommendations of the engineer commander.

b. The most difficult part of a river crossing operation lies in harmonizing the tactical and technical requirements.

c. The actual crossing of the attacking troops depends largely on the technical training of the troops.

■ 51. MINOR OPERATIONS.—When engineers do not form a part of the command, the combat troops must devise and operate the means of crossing. This may involve the construction of improvised rafts, assembly of available boats, or the swimming of part or all of the command.

■ 52. PHASES.—An attack against a river line that cannot be crossed unopposed may be divided into three phases:

a. Reconnaissance and preparation for crossing.

b. The operation of actually crossing the river and gaining a foothold on the defender's side of the river.

c. The operation of continuing the attack and of obtaining possession of the controlling terrain on the defender's side of the river.

■ 53. RECONNAISSANCE.—a. Reconnaissance begins at an early stage of the offensive operations. By the use of all available reconnaissance agencies, including aviation, the commander seeks information upon which to base his plan of attack. Such reconnaissance is both tactical and technical.

b. The tactical and technical reconnaissance should be conducted jointly. This promotes coordination from the start. Technical information includes the locations of fords or other points of crossing both for the main attacks and for feints, and more detailed information of the nature of the terrain on both sides of the stream. Tactical information includes the manner in which the enemy is holding the line, such as the strength and location of the enemy's troops at the river's edge and the disposition of his supports and reserves. Much of this must be done by the crossing or attempted crossing of numerous small patrols.

■ 54. PREPARATION FOR CROSSING.—During the reconnaissance the command should be held well back from the river. After the points for crossing have been selected, the commander should so conduct his march that he can bivouac in front of the crossing selected for the feint or march toward it. While

the troops for the feint continue to their objective, the remainder of the command should change direction, either after dark or by utilizing all available ground cover, and move toward the vicinity selected for the main crossing. If this move is made under cover of darkness it should be so timed that the crossing may begin at daylight or earlier. The combat troops should arrive about 1 hour prior to the time set for the crossing. The technical troops, with a covering detachment, should precede the command and make the necessary preparations to cross the combat troops. The combat troops should move forward in the order of their scheduled crossing. Supporting weapons should be at or near the heads of the leading elements in order to facilitate their early emplacement to support the first troops to cross.

■ 55. CROSSING.—*a. Feint.*—(1) This is made usually as the secondary attack of the operation. Its purpose is to attract the hostile supports and reserves and induce the enemy commander to commit his forces in a wrong direction or cause him to delay their commitment, due to uncertainty, long enough for the main attack to gain a strong foothold on the defender's side. To do this it should start its operations sufficiently early, prior to the main attack, to entice the hostile reserves to its front, yet not so early that its efforts are spent before the main crossing begins. It should be made as realistic as possible and a crossing actually made should the lack of hostile resistance permit. In such case, it may develop into the main attack and be followed by troops originally assigned to the main effort; or it may, after crossing, move to the assistance of the main attack by threatening or operating against the enemy's flank and rear. It should be strong enough to accomplish its purpose and to protect itself should it succeed in effecting a crossing.

(2) If the secondary attack has not effected a crossing, it should be ordered to desist as soon as the success of the main crossing is assured. It then moves as rapidly as possible to the point where the crossing has been made and rejoins the command without delay.

(3) The feint may be made as a gesture merely by marching toward a possible crossing point and then changing direction under cover and marching the whole command to the point selected for the actual attempt at crossing. The feint may also be made by the use of a smoke screen at some

suitable point to indicate that combat troops may be crossing with its assistance.

b. Main attack.—(1) The crossing is made by fording, swimming, or ferrying by means of pontons or other boats or rafts. It should be made on a broad front with several troops or larger units abreast, each assigned a zone or point for crossing. The operation of crossing may take place wholly or in part under cover of darkness. Due to the confusion and disorganization incident to operating in the dark, it may be impracticable for a large force to cross before daylight. The most favorable time is such that the leading elements—that is, the covering detachments and the bridgehead troops—can arrive at the far bank just prior to daylight.

(2) The covering detachments cross first, dismounted. They avoid points which they believe to be covered by hostile machine guns, even if they have to select less favorable points. Once safely on the opposite shore they may work along the bank and outflank or eliminate hostile machine guns or other resistance at or near the river's edge which may be covering the more favorable crossings. The combat to secure these more favorable points should take place on the land, not from the water.

(3) Since the defender usually holds the river's edge lightly and depends upon centrally located reserves for resistance, the crossing, when once started, should continue as rapidly as possible. The bridgehead troops, usually dismounted, should cross after the covering detachments, generally in several ways. They push forward after landing and seize and occupy a bridgehead line. This line initially should be such as to prevent hostile machine guns from firing on the crossings and to deny hostile artillery observation. Subsequently, the position should be extended rapidly so as to eliminate all hostile artillery fire on any bridge site required for the bulk of the command. Under the protection of the bridgehead, the remainder of the command crosses, bringing with them the led horses or vehicles of the covering detachments and bridgehead troops.

■ 56. MACHINE GUNS AND MORTARS.—All machine guns and mortars crossing with the bridgehead troops are placed where they can support the operation by fire, particularly during the initial phases of the attack. Usually fire is withheld until the crossing of troops is discovered by the

enemy. Machine guns and mortars are crossed by echelon as soon as the bridgehead troops have gained their objectives. A smoke screen placed on the defender's side of the river affords cover for the troops that are crossing and greatly reduces the effect of hostile machine-gun fire.

■ 57. CONTINUATION OF ATTACK.—After the crossing of the river has been accomplished, and if still opposed by the enemy, an attack must be launched promptly. This is the best means of preventing or neutralizing hostile counter-attacks. Although speed must characterize the continuation of the advance, it must be a coordinated and not a piecemeal attack.

SECTION VII

NIGHT ATTACKS

■ 58. GENERAL.—*a.* Night attacks may be made to avoid air observation and observed defensive ground fires. As a rule night attacks are practicable only on terrain which is well mapped and which possesses such features as stream lines, fences, and roads leading to the objective. Open terrain is preferable since it will facilitate control and movement. Unless preceded by thorough reconnaissance, night attacks should not be attempted.

b. Where time permits, troops should rehearse the attack on terrain similar to that over which the attack will be made. In the absence of such terrain, exercises based on relief maps of the projected attack area should be conducted.

c. Owing to difficulties of control, night attacks are preferably restricted to units the size of a regiment or smaller. Well-trained troops, preferably those of high morale and not unduly fatigued, should be used. Good leadership and careful preparation are needed.

d. Special equipment, such as hand grenades, identification means, flares, and the like should be provided for night attacks.

e. Night attacks are habitually made dismounted, therefore—

(1) Horse elements of Cavalry constitute the principal troops for the attack.

(2) Mechanized elements, due to their vulnerability at night and to the fact that they are forced to operate with-

out lights, which restricts their operation to the use of roads, are not usually employed as such in night attacks.

¶ 59. MISSIONS.—Night attacks may be directed by the higher command in order—

a. To surprise an unprepared enemy.

b. To continue a daylight attack in order to prevent strengthening of enemy dispositions or his withdrawal under cover of darkness.

c. To minimize losses in seizing a limited objective.

d. To seize a vitally needed terrain feature, against which daylight attacks have been repulsed.

e. To straighten out a battle line preparatory to a general attack in daylight.

f. To complete or exploit a success.

¶ 60. OBJECTIVE.—The objective must be a limited one, well defined, not so deep as to necessitate a reorganization during the attack, and sufficiently accessible to permit a visual reconnaissance of its approaches in daylight. The intervening terrain should not afford serious obstacles. A strongly fortified position, protected by enemy wire, cannot be successfully assaulted at night unless the attack is preceded by an intensive artillery concentration sufficient to breach or destroy the enemy obstacles.

¶ 61. HOUR OF NIGHT ATTACK.—The hour of attack may be prescribed by the higher command or by the commander of the attacking force. An early attack is used to prevent the enemy's withdrawal or the strengthening of his position during darkness. A later attack is prescribed when preparing to continue the attack at daybreak.

¶ 62. WEATHER.—A bright night favors control but detracts from concealment for the attacker. A wind from the enemy direction assists in counteracting the noise of night movements. The use of careful preparation and well-trained troops lessens the need of ideal weather conditions.

¶ 63. PREPARATIONS.—Necessary preparations include—

a. Reconnaissance.

b. Selection of routes and assembly position.

c. Formulation of the plan of attack.

d. Provisions for coordination, control, identification, and secrecy.

e. Rehearsal where practicable.

■ 64. RECONNAISSANCE.—*a.* Daylight reconnaissance is as complete as secrecy, time, the enemy, and the terrain permit. Its forward extent is limited in order to avoid alarming the enemy. A brief night reconnaissance follows to verify aspects of the terrain after dark. Reconnaissance at dusk enables one to visualize day and night aspects of the terrain.

b. The commander of the attacking unit, accompanied by his next subordinate commanders, reconnoiters in daylight and determines and outlines his plans for the attack.

c. Reconnaissance by subordinate commanders extends down to include platoon commanders, if time permits, and is as thorough as practicable. Leaders are thus enabled to determine assembly areas, routes thereto, initial attack positions, appearance of the objective, location of landmarks en route thereto, and intervening obstacles.

■ 65. FORMULATION OF PLAN OF ATTACK.—Thorough planning by all leaders is essential to the success of a night attack in order to minimize the confusion that results from poor visibility.

a. Routes to the assembly position are selected that are well defined and avoid crossing columns en route. Guides or luminous markers are posted at critical points along the route and other guides accompany each troop.

b. Assembly positions are selected well forward. Sufficient time is provided for deployment and final issuance of orders. The line of departure should be close to the forward edge of the assembly position, well defined and preferably perpendicular to the direction of attack.

c. The axis of advance to the attack must be direct and unmistakable. Terrain without serious obstacles in the route of attack is essential. Maneuver of elements away from the axis of attack is avoided.

d. If available, unmistakable routes of approach, such as trails, railroads, the edge of a wood, ridge, or valley, are assigned to subordinate units. Each unit is assigned a compass direction.

e. Each assault troop is preceded by a small patrol as a covering detachment. It proceeds boldly but stealthily at distances no greater than 100 to 150 yards depending upon the terrain and the darkness of the night. It is absorbed by the assault units as contact is gained.

f. Distinguishing marks are provided for all engaged. A white arm band on each arm or a white handkerchief pinned to the individual's back is a feasible means of identification. Passwords and countersigns also are used.

g. Secrecy is essential to surprise. All lights, smoking, loud talking, unnecessary noise, and whistle signals are prohibited until the attack has been discovered.

■ 66. ORDERS.—Orders for night attacks must be explicit and in greatest detail. Every man should have a thorough understanding of what he is to do in the attack. Orders cover not only the preliminary movements and actions prior to reaching the objective, but also include action to be taken after reaching the objective and in case of enemy counterattack.

■ 67. SECURITY.—Attacking forces depend to a large extent on darkness and secrecy for security. Forward security is provided by the small patrol preceding each troop and the scouts of the assault platoons. Flank security is provided by small patrols from the reserve.

■ 68. FORMATIONS.—*a.* Initial formations must be compact and flexible to assure direction and control. Distances and intervals depend on visibility and the difficulties of the terrain. All units are assigned definite directions of advance.

b. The troops are usually disposed for the attack with about two-thirds of the strength in the assault and about one-third in reserve.

c. Assault squadrons are normally disposed with two troops in the assault and one in reserve. The assault troops may be abreast, echeloned, or in column. The interval between assault troops, sufficient for deployment at decreased intervals, may vary initially from about 75 to 125 yards. A connecting group, usually a half-squad, operates in this interval. The reserve troop is disposed as directed by the squadron commander. The squadron commander marches where he can best maintain control and direction.

d. Assault troops start in column of twos, each preceded by a patrol. Both scouts of the leading squad maintain contact with the forward patrol. When the forward patrol reports or indicates approaching contact, the troop deploys with the two leading rifle platoons abreast in line of platoon columns at 40 to 60 yards' interval, the rear rifle platoon following in support at 25 to 50 yards. The light machine-

gun platoon is conducted as directed by the troop commander. The troop commander marches where he can best maintain control and direction.

e. Assault platoons remain in column of twos until contact becomes imminent in their immediate front. Each platoon is assigned a definite direction. The leading squad is preceded by both of its scouts at the limit of visibility. The platoon commander leads the platoon and directs the scouts of the leading squad.

f. At the first intimation of close contact, the platoon takes up a wedge-shaped formation. The leading squad continues straight ahead, assuming a squad column formation. The second squad moves to the left and the third squad to the right, each assuming a squad column formation, until an interval is established between squads of 15 to 40 yards, depending on the limit of visibility. Each flank squad is echeloned behind the center squad and is preceded by its principal scout. Squad leaders lead their squads, with the second-in-command following the squad. Deployment as skirmishers does not permit control.

g. The support platoon follows its assault platoons in column of twos, usually at 25 to 50 yards. Both scouts of the leading squad follow the assault platoons at the limit of visibility, and the support platoon follows its scouts within the same limits. The platoon commander leads the platoon and directs the scouts of the leading squad.

■ 69. RESERVE.—*a.* The reserve is held in readiness to reinforce the occupation of the position or to protect the withdrawal, if necessary. It cannot be used as a maneuver element. It must not be committed prematurely nor intermingled with the assault units.

b. The regimental reserve is held in readiness in a position near the line of departure, off the line of attack, from where it can best cover the withdrawal or reinforce the consolidation of the objective.

c. The squadron reserve usually consists of one rifle troop. After the assault troops have started, it occupies a previously determined position between the line of departure and the objective and off the line of attack. It is located so as to be able to counterattack in flank in case the enemy repels the attack and pursues, or to reinforce the occupation of the objective.

d. The troop reserve, usually one rifle platoon with a light machine gun squad attached, is used when a troop attacks alone. It functions similarly to the squadron reserve.

■ 70. OPERATION.—a. Surprise in the time and direction of the attack is essential. The attack has three phases:

Advance to assault.

Assault.

Reorganization and consolidation.

b. Each attacking unit drives straight to its objective without regard to the progress of adjacent units. Firing is withheld by the assaulting troops. When hostile illuminating flares are thrown, platoon and squad leaders require their men to remain motionless until the flare has burned out. The advance is made cautiously and quietly until the alarm is given.

c. After the alarm is given, speed is important. If enemy individuals are encountered, the scouts rush them. If larger groups are encountered, the scouts indicate their proximity by predetermined signals. The platoon leader then directs the leading squad to close with the enemy group. Flank squads are committed as needed.

d. The assault platoons reach the objective at varying times and intervals. Squads and platoons close with enemy groups to their immediate front without halting to return the fire. Rifle butts, pistols, and hand grenades, if available, are used in close combat. The support platoon does not merge with the assault platoons until committed by the troop commander.

e. The reorganization is covered by previous instructions. The position is consolidated and combat groups are organized. Security measures are taken and contact is established with adjacent units. The light machine-gun platoons are brought forward and the guns are sited for close defense of combat groups. Heavy machine guns are brought forward to reinforce the consolidation of the position. Instructions are issued to the reserve. Each unit commander informs the next higher commander of the situation. Pursuit is not initiated.

■ 71. MACHINE GUNS AND MORTARS.—a. Firing is kept at a minimum during the hours preceding a night attack in order to maintain surprise.

b. Light machine guns are used to reinforce the consolidation of the captured position or to protect the withdrawal if

the attack is repulsed. The light machine-gun platoon moves by bounds, following and maintaining contact with the support platoon. When the assault echelon gains contact, the light machine-gun platoon remains closely available under cover from where it can be brought forward quickly if necessary. A liaison agent from the light machine-gun platoon accompanies the troop commander.

c. Heavy machine guns are prepared to place fires on the enemy line beyond the flanks of the attacking troops and on suspected enemy assembly positions. Firing data are computed in the daytime. These fires are controlled by pre-arranged time schedules or signals and are withheld until the attack is discovered. One platoon is prepared to join each assault squadron promptly after capture of the objective to reinforce the consolidation of the position. Its missions then conform to those in normal position defense, with particular stress on protective fires on the flanks of the captured position.

d. Mortars remain under central control. They may support the attack, after it has been discovered, by placing fire beyond the front and flanks of the objective of the attack, especially on suspected locations of enemy reserves. Firing data are computed during daytime. It is not advisable to attempt to adjust mortar fires in close support of a night attack because of danger to assaulting units.

e. Caliber .50 machine guns and other antitank weapons are not generally used in night attacks owing to the improbability of enemy mechanized units being active. One section or platoon per squadron may be sent forward before daylight, if necessary, to resist enemy counterattacks by mechanized elements after daylight.

■ 72. PLAN OF ACTION IN CASE ATTACK IS REPULSED.—This information is distributed only to officers. Rallying points and routes thereto are prescribed for squadrons and troops for their assembly if the attack is repulsed. These rallying points are located off the line of attack and preferably under cover. (See FM 100-5.)

CHAPTER 3

DEFENSIVE COMBAT

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SECTION I

THE DEFENSIVE

■ 73. **GENERAL.**—*a.* Within the scope of its powers and limitations, Cavalry operates in defensive combat the same as Infantry.

b. The general doctrine for the defensive is covered in FM 100-5, FM 5-15, and FM 5-20.

c. Due to organization and characteristics, cavalry units usually occupy comparatively broader fronts with less depth than do corresponding infantry units.

d. In defensive combat the position or area to be defended is prepared for defense and occupied by a small proportion of the available cavalry force consisting principally of horse elements, while the bulk of the command, including the mechanized elements, by maneuver and threat or actual attack endeavors to block or divert the enemy at a distance. Even when it is necessary for Cavalry to defend a particular area or position, its best chance of success lies in initial dispositions in advance of the final defense area. In this manner inherent mobility will be used to best advantage.

e. Cavalry, being forced to occupy the defensive position on a wide front with restricted depth, is unable to sustain a prolonged defensive action. It therefore, if practicable, interrupts the advance of the enemy by delaying action in successive positions rather than by holding a single position. (See sec VI.)

■ 74. **MECHANIZED ELEMENTS.**—*a.* *Scout cars and motorcycles.*—(1) Scout cars and motorcycles are used to conduct reconnaissance. Before contact is gained, scout car and motorcycle elements are sent to locate and maintain contact

with the advancing hostile forces. They may be attached to the covering force. Part of them may delay the hostile advance by harassing action against the front and flanks of the enemy.

(2) As contact between the defending and attacking forces is gained, scout car and motorcycle elements withdraw to the flanks and continue reconnaissance of the hostile flanks and rear to gain early information of the location and movement of hostile reserves as well as direction of hostile main attack.

(3) They may delay hostile envelopments by harassing actions.

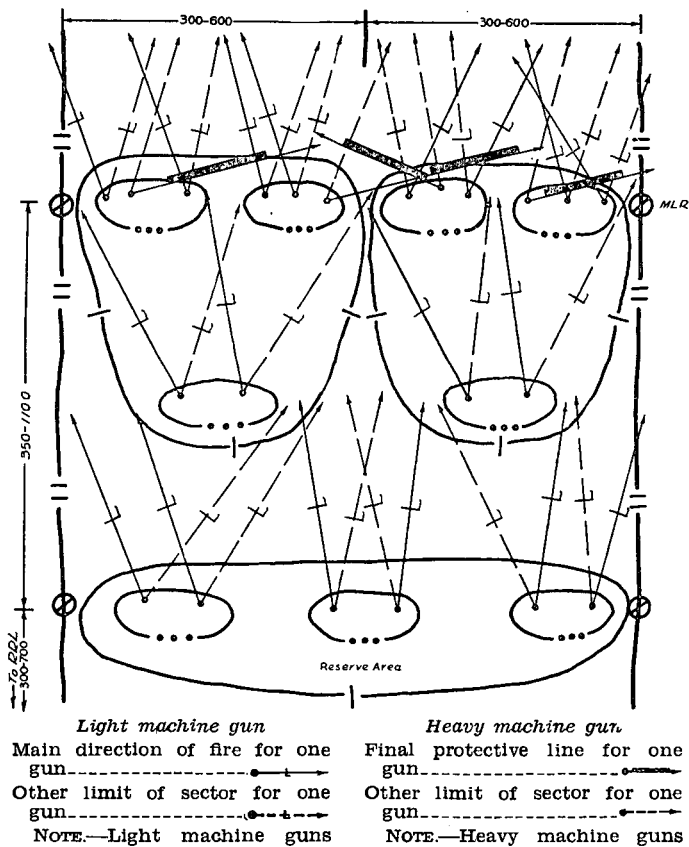
(4) Though missions of delay are sometimes given scout car and motorcycle elements, it should be remembered that reconnaissance is their primary function.

b. Light tanks.—Available light tanks are employed to assist the operations of the scout car and motorcycle elements. When the attacking force has gained contact with the defending forces in position, light tanks may be used to assist the attack or be withdrawn and held in reserve prepared to assist counterattacks. They may also be used to assist the anti-aircraft and anti-mechanized defense of the position.

¶ 75. CAVALRY ORGANIZATION OF POSITION.—*a. General.*—The commander of the defending unit assigns sectors to subordinate units. Within the sectors assigned, the units are deployed in width and depth so as to take advantage of the terrain features possessing the best defensive qualities.

b. Frontage and depth.—(1) Frontages of the larger units depend on the number of squadrons disposed on the main line of resistance. Squadron frontages depend upon the number of platoons disposed on the main line of resistance. A platoon on average terrain in position defense can be disposed to cover by fire a front of 300 yards (fig. 1). A squadron with two troops deployed on the main line of resistance (each troop disposed with two platoons on the front line and one in support), terrain permitting, can thus cover by fire a front of 1,200 yards in position defense. Narrow frontages are assigned on the weaker portions of the front and broad frontages on the stronger portions.

(2) The depth of the battle position varies from 800 to 1,800 yards. Depth is obtained by disposing supports and reserves at varying distances behind the front line. Each



NOTE.—Light machine guns supplement missions of heavy machine guns by filling gaps in their final protective lines.

NOTE.—Heavy machine guns are only far enough forward to establish final protective lines.

MLR—Main line of resistance.

⊕—Limiting point.

FIGURE 1.—Squadron in defense (schematic).

unit the size of a troop or larger should hold out a support or a reserve. The distance between successive defensive areas or localities varies between 150 and 700 yards (fig. 1). Each unit behind the front line supports the more advanced units by covering the intervals and flanks with fire, by reinforcing front-line units, by counterattacking to drive

out hostile penetrations or envelopments, and by supporting counterattacks with fire. They should not be so close to the front line as to come under artillery fire directed at more advanced elements, or become involved in case hostile troops overrun forward positions. They should be sufficiently close to support forward elements with small-arms fire or to launch a coordinated counterattack anywhere within the sector.

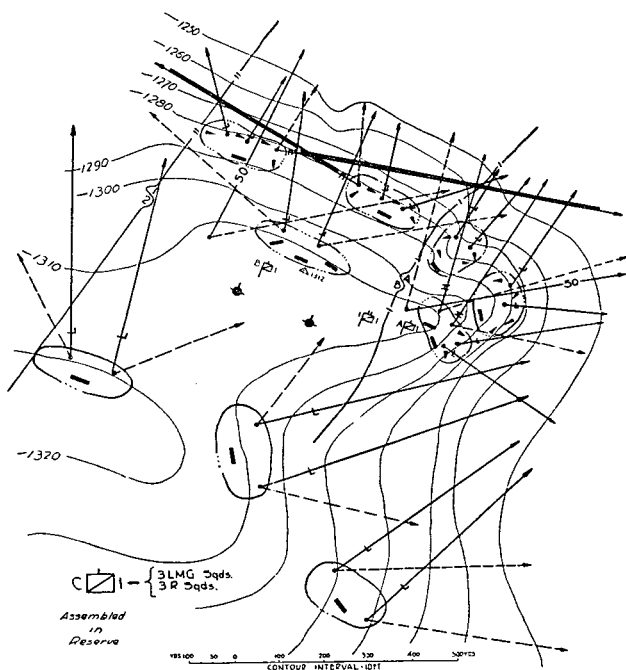
c. Assignment of units to sectors.—(1) The regiment is given a sector for defense in which it organizes squadron defense areas.

(2) Depending upon tactical considerations, a regiment may deploy with one or both of its squadrons, less a reserve, in the forward area. Normally the reserve remains mobile. The reserve is employed either to outpost the front of the position, to protect the flanks and rear, to attack the enemy while still at a distance or while he is attacking the dismounted elements, or to counterattack enemy forces which may have penetrated the battle position.

(3) The squadron is the unit upon which the commander bases his plans for the organization of the position. As part of a larger force, the squadron generally organizes a squadron defense area (fig. 2) in which are troop areas capable of mutual support. Normally the squadron is disposed with two troops in the front line and one in reserve. The squadron reserve furnishes the necessary local security including the outpost, if responsibility for the latter is decentralized to squadrons. The reserve and troop supports initially assist the forward groups in the construction of obstacles and clearing of fields of fire.

(4) The troop is assigned an area which may vary between 300 and 600 yards in width in position defense. The troop normally deploys with two platoons on the front line and one in support. The depth of a troop defense area varies from 150 to 400 yards.

■ 76. MACHINE GUNS, ANTITANK GUNS, AND MORTARS.—*a. Heavy machine guns.*—(1) Heavy machine guns form the framework of the defense. All or most of them are used to support the defense of the main line of resistance. The bulk of the guns in the main position are so located as to place fires on likely avenues of enemy approach and to place bands of fire in front of the main line of resistance (final protec-



- Plat combat group areas.....
- Primary sector fires of heavy machine guns.....
- Primary sector fires of light machine guns.....
- Caliber .50 machine gun.....
- Secondary sector fires.....
- Final protective fires of heavy machine guns.....
- Rifle squad groups.....
- Rifle 1/2-squad groups.....
- 60-mm mortar.....

In left sector heavy machine guns are sited for final protective and sector fires. In right sector heavy machine guns are sited for sector fires only. Primary fires only of forward light machine guns are shown. Both primary and secondary fires of rear light machine guns are shown. Note fires to protect the right flank and corridor of approach. The combat group areas of the squadron reserve are reconnoitered and lightly held.

FIGURE 2.—Front-line squadron in defense.

tive lines). Other guns may be placed farther to the rear primarily to prevent complete penetration of the position and to support counterattacks. Alternate positions are selected from which they can accomplish these missions.

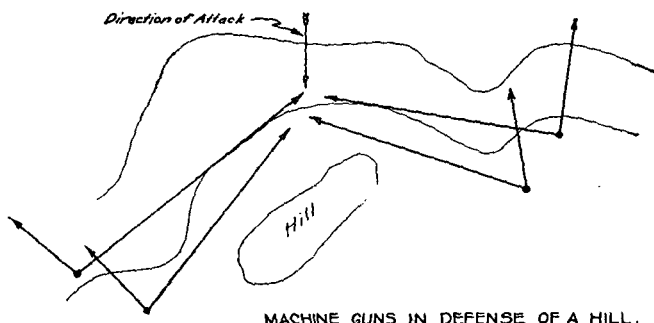
(2) Normally all guns are placed in firing positions, none being held in reserve.

(3) Normally the heavy machine guns of a regiment are retained initially under regimental control and placed by the machine-gun troop commander in accordance with the orders of the regimental commander. While they may be sited in squadron areas, they are not usually attached to squadrons nor to smaller rifle units initially. Adjustment between the positions of rifle units, light machine guns, and heavy machine guns is necessary. After the necessary adjustments have been made by the regiment, these weapons may be attached to the units in whose sectors they are located.

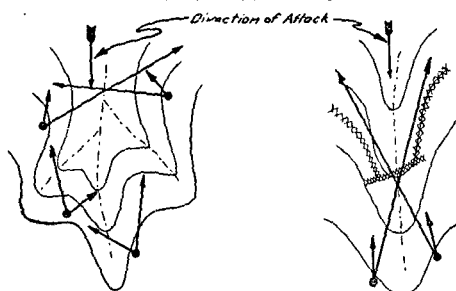
(4) A hill is defended by placing heavy machine guns on its shoulders or flanks rather than on its summit; a ravine, by placing guns at its head and on one or both sides so as to sweep its sides with fire; a ridge, by oblique fire across its face or along its crest. In general, the direction of fire parallels the contours. A wood or village may be defended by placing flanking fire across its front, sides, and rear. Guns also may be placed inside such a terrain feature for the purpose of establishing an interlacing network of bands of fire on possible crossing places and on likely approaches to the farther bank. In all cases the guns should be placed so as to obtain the best concealment consistent with their fire missions. (See fig. 3.)

(5) When the enemy attacks, forward guns open fire on remunerative distant targets in their sectors. When the attack closes on the position, their fire is laid on final protective lines where it remains.

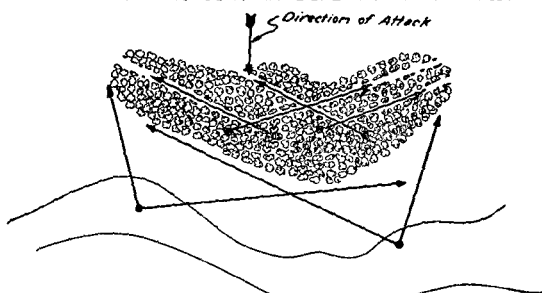
(6) Guns in rear areas fire long-range concentrations, perform sector fires, and reinforce the final protective fires of guns farther to the front. They may be employed for counterpreparation fires or to fire in front of the position and on units penetrating or outflanking it. If the hostile attack breaks down, guns pursue by fire. If it succeeds, guns either remain in position until captured or withdraw upon orders from higher authority.



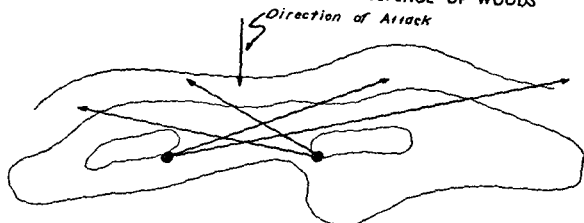
MACHINE GUNS IN DEFENSE OF A HILL.



MACHINE GUNS IN DEFENSE OF RAVINES.



MACHINE GUNS IN DEFENSE OF WOODS



MACHINE GUNS IN DEFENSE OF RIDGE

FIGURE 3.—Machine guns in defense of terrain features.

b. Light machine guns.—(1) On the battle position when heavy machine guns are present, the light machine guns are used to complete or augment the fires of the heavy machine guns. When heavy machine guns are not present, the light machine guns take over the missions usually assigned the heavy machine guns.

(2) Coordination of their fire with that of the heavy machine guns is obtained by consultation and agreement between the machine-gun troop commander, who is the regimental machine-gun officer, and the squadron machine-gun officer.

(3) It is normal for light machine guns to be retained under the direct control of the rifle troop commander. Coordination between the fires of adjacent machine-gun elements is secured as directed by the squadron machine-gun officer. The rifle troop commander may attach light machine-gun elements to rifle platoons, in which case the platoon commander places the light machine guns to the best advantage in his combat group to conform to the squadron or troop light machine-gun plan. Light guns may be used singly or in pairs with outposts or combat patrols, but the bulk of them are used in the battle position.

(4) Front-line guns should have sector missions in which they fire on targets of opportunity within their sectors and also on the final protective line. Light machine guns are sited for direct fire. They may be sited singly or in pairs. They are useful for night firing and should be so used. They should have alternate positions. All guns are given fire missions, even those with support and reserve units.

c. Caliber .50 machine guns.—Caliber .50 machine guns are sited in defense principally for antimechanized missions. If there is a particularly favorable avenue of approach for mechanized approach from the front, some guns may be placed in or near the front line to cover it. Some guns should be placed well out toward either flank if unprotected by terrain, and some in rear of the firing line, with particular attention being given to the protection of led horses or vehicles. The guns should be sited for direct fire and placed in mutual support and in depth. Some guns may be held in position so as to be quickly available at the point of attack. When there is no attack or threat by enemy mechanized elements, caliber .50 machine guns may be employed as anti-machine-gun weapons.

d. Antitank guns, 37-mm.—Antitank guns, 37-mm, when available, are held initially under cover near previously reconnoitered positions and alternate positions on likely avenues of approach by hostile mechanized elements. The locations of the guns are such that they may occupy their positions in time to meet the hostile tank attack before it reaches the main line of resistance. It is essential that antitank weapons be sited so as to bring enemy tanks under fire at the maximum effective range. In general, the same criss-cross fire that is common for machine-gun defense is also desirable for antitank defense. Antitank weapons should be distributed in depth, preferably with a minimum of guns in position initially to cover obstacles and as a first echelon of antimchanized defense and with a maximum of guns as mobile reserves. Gun positions should be located especially on terrain that is not suitable for tank advance so that enemy tanks may be brought under fire from the flank. Close-in protection for antitank guns must be provided by other troops.

e. Mortars.—Mortars are employed against personnel and automatic weapons. Ability to reach defiladed positions by high-angle fire makes it possible to break up formed reserves, to fire on enemy led horses, and to place defensive fires on ravines and avenues of approach which cannot be covered effectively by machine-gun fires. Mortars should be located in rear of the main line of resistance and forward of the support area. A rear position gives better protection but has the disadvantage of loss of observation and of shortening the range to which the mortar can reach forward of the main line of resistance. The position should be defiladed, away from other troops and supporting weapons, and in such locality that fire can be placed upon the avenues of approach to the position which can be blocked more advantageously by high-angle fire. The mortar is assigned areas of fire which are part of, and coordinated with, the defensive fires of the position. The mortar may be used to deliver smoke in coordination with counterattacks or withdrawals from action. Their missions are to neutralize enemy observation posts at critical periods of the defensive action. Smoke should be used with caution in defensive situations.

■ 77. TROOP LEADING IN DEFENSE.—*a. Information.*—In any situation involving the occupation of a defensive position,

advance information for unit commanders assures prompt disposition of troops. Such information should include—

- (1) Pertinent information of the enemy.
- (2) Mission and general plan of defense of the unit and next higher unit.
- (3) Sector limits.
- (4) Enemy approaches needing particular attention.
- (5) Attached supporting weapons in the unit sector, and their approximate locations and missions.
- (6) Disposal of led horses (location, mobile or immobile status).
- (7) Security measures to be provided.
- (8) Location of unit command post and that of next higher unit.
- (9) Data as to eventual coordination of fires with supporting weapons and adjacent units, and administrative details relative to supply (ammunition, antitank mines, rations, water, entrenching tools, barbed wire, and other materials for construction of defensive works), evacuation, and communication.

b. Plans.—Every sector commander briefly formulates his plan before deploying his unit. Prompt analysis of the terrain and of the information received is a prerequisite to formulation of this plan. Careful consideration must be given the mission of the defense; the strength and character of the enemy; the composition and strength of defending troops and supporting weapons; the terrain; the size of the sector to be defended; and the time and tools available for the organization of the ground. Based on these considerations, the plan for defense must provide for the—

- (1) Distribution of groups, supporting weapons, and available antitank mines to block likely avenues of approach.
- (2) Distribution of tools and the organization and preparation of the ground, with emphasis on machine-gun positions, fox holes, and obstacles, time being the limiting factor.
- (3) Flexibility, by arranging supplementary fires and providing for movement of supports and reserves.
- (4) Economy of force by defending strong places lightly and weak places strongly.
- (5) Administrative details to include provisions for disposal of led horses, for supplies (especially ammunition, ra-

tions, and water), evacuation, location of command post, and communication.

c. Action and orders.—(1) The commander must so conduct his reconnaissance, prepare his plans, and issue his orders that troops can move into and occupy a position with a minimum of delay. Fragmentary orders are usual. The reconnaissance by leaders goes on simultaneously with the development of units. Fires are coordinated progressively.

(2) The following table indicates the actions and orders required of a troop commander and his subordinates for the occupation of a position as part of a larger unit under circumstances in which the squadron is in a rear area and the command is not in immediate contact with the enemy. The troop commander is in receipt of orders at a forward observation post. The same procedures apply to larger units.

Troop commander	Platoon commander	Platoon sergeant
Sends message to attach light machine gun squads to rifle platoons as desired, to have troop brought to forward assembly area, and to have platoon commanders report at forward observation post.		
Goes on quick reconnaissance of troop sector.	Rides forward with platoon sergeant and platoon messengers to join troop commander at forward observation post.	Accompanies platoon commander.
Explains enemy situation and general plan of defense for the troop to platoon commanders on their arrival.		
Indicates main line of resistance, troop support line, troop sector, platoon sectors, approximate locations and missions of supporting weapons, and enemy approaches vital to the defense.		
Directs disposal of led horses and extra ammunition and equipment to be brought forward.		

Troop commander	Platoon commander	Platoon sergeant
Indicates location of engineer tools, if available, and the extent of excavation to be performed in the organization of the ground.	-----	
Indicates squadron and troop command posts.	Sends message to sergeant file closer to bring platoon forward mounted to platoon area.	
Directs lieutenant, light machine-gun platoon, and first sergeant to accompany him on continued reconnaissance of troop sector.	Goes on quick reconnaissance of platoon sector.	Accompanies platoon commander.
Receives definite information as to locations and missions of supporting weapons, and locations of artillery concentrations (if available).	Directs platoon sergeant to meet the platoon, to direct each squad to its approximate area, to have squad leaders meet him at indicated point, to have sergeant file closer, dispose of led horses and send ammunition forward as directed.	Rides to meet platoon to transmit orders of platoon commander and direct platoon to its area.
Informs platoon commanders definitely as to locations and missions of supporting weapons, required missions of light machine guns and security measures to be taken, and locations of artillery concentrations (if artillery is available).	Directs siting of light machine guns, disposal of rifle squads, initial excavation of ground, preparation of obstacles, and execution of security measures.	Assists in disposing squads and direction of working parties.
Inspects troop sector to assure coordination of the defense.	Inspects platoon defensive dispositions and work. Accompanies troop commander through platoon area.	Accompanies platoon commander.
Issues orders to cover administrative needs of the troop in the defensive position (water, rations, ammunition, final disposal of led horses, evacuation, and communication).	Readjusts light machine guns and rifle squads to assure coordination of fires.	Assists platoon commander.
	Directs platoon sergeant to execute instructions for administrative needs.	Executes administrative instructions for the platoon.

SECTION II

DEFENSE OF LOCALITY

■ 78. GENERAL.—Occasionally small independent commands are called upon to garrison or guard isolated localities, such as villages, ranches, or bridges, and at the same time be prepared to defend the locality against attack, frequently by superior numbers of irregular troops. The absence of daily contact with the enemy and the lack of definite information of him increase the danger of surprise. Nonmilitary or routine duties that are required of the command may cause it to be scattered or place it at a disadvantage in uniting to meet a sudden attack unless precautions peculiar to such situations are taken. The military aspect of defense is complicated further by the presence of noncombatants and the extent of property to be guarded. In such a situation an intelligence officer is detailed and furnished with the necessary personnel and means for carrying out his work. This officer must cooperate with the civil authorities of the locality and utilize every opportunity for obtaining information. He must make the acquaintance of and keep in close touch with such responsible civilians as by nature of their pursuits or acquaintances are most apt to furnish reliable information. Close touch is kept with the enemy situation through information furnished by local intelligence agencies as well as those of higher echelons. Reports or rumors that cannot be verified are assumed to be true and the command kept on the alert while investigation is made.

■ 79. PLAN OF DEFENSE.—A plan of defense is prepared and the command trained in carrying it out. This plan includes the security measures to be maintained, the kind of defenses to be prepared with their location, designation of troops to occupy each prepared position, routes to be taken to such positions if not occupied at all times, designation of the reserve, designation of assembly points, communications to be installed and employed, disposal of horses, disposal of non-combatants, clearing of streets, and such other considerations as the situation requires.

■ 80. DISPOSITIONS.—*a.* The general scheme of deployment conforms to the procedures of a mobile defense. It is char-

acterized by little depth, extension of front, volume of fire, and an aggressive attitude. A carefully organized observation and communication system must be provided, and the personnel maintained especially alert at night or during other periods of poor visibility.

b. Intrenchments suited to the size of the command and the nature of the locality to be guarded are prepared, and provisions are made for antiaircraft defense. In the case of a village, simple field works are usually sufficient if occupied by groups of appropriate size. They should be located in salients to afford mutual support. Upon the completion of these works they should be occupied temporarily by the troops assigned to them, and frequently thereafter for training purposes. Firing data should be prepared so that night firing can be employed without danger of firing into friendly troops. Small units in observation occupy these works.

■ 81. RECONNAISSANCE.—Ground and air patrolling at a distance at irregular times during the day and night and by varying routes is employed against surprise attacks. Distant patrols are provided with means of signalling an enemy advance. Telephones are used where practicable, but sole reliance is not placed on them. If airplanes and mechanized elements are present they cooperate in conducting the distant reconnaissance. They are sent over all possible routes of hostile approach to gain and maintain contact with the enemy. They may be used to harass and delay the hostile forces.

■ 82. COMMUNICATION.—Sometimes considerable dispersion of a command is required by the mission. Communication between the dispersed elements is of prime importance. All available means of communication are employed. Additional telephone wire and instruments are promptly established. Arrangements are made with the local telephone company for use of civilian telephones. Plans for the use of civilian owned automobiles and motorcycles are formulated, and plans and instructions made for their use. Full use is made of pyrotechnics and visual signal devices. If sufficient mechanized vehicles are available they can be used for communication purposes between widely dispersed elements.

SECTION III

DEFENSE OF DEFILE

■ 83. GENERAL.—In case of a long defile, defense may be conducted in three ways, depending primarily upon the purpose of the defense:

In front of the defile.

Within the defile.

In rear of the defile.

■ 84. CONDUCT.—*a. In front of the defile.*—The defender's fires are divergent and his maneuver space is limited. The position is weak and should be employed only to cover a debouchment or withdrawal. If such position is occupied, it should be far enough to the front to protect the entrance from hostile fire, especially that of artillery. If the flanks are accessible, detached posts must be located to prevent outflanking. Delaying action is usually indicated in such a situation.

b. Within the defile.—The restrictions imposed by a defile upon the defender's mobility and front make defense wholly within the defile a difficult operation. A small force may, however, hold off a greatly superior force for considerable time. Maximum utilization of obstacles and demolitions combined with ambush and delaying tactics will be most effective.

c. In rear of the defile.—This is the most suitable position from which to defend a defile, because the attacker's front is limited, his maneuver is restricted, and he is subjected to converging fires. The distance of the first line of defense from the exit should be such as to enable converging fires to be brought upon the hostile columns before they can debouch. The defense is greatly augmented by sending forward a detachment to delay within the defile, aided by obstacles and demolitions.

SECTION IV

DEFENSE OF RIVER LINE

■ 85. GENERAL.—Due to the obstacle created by the river itself, a river line is of special significance when choosing a particular piece of terrain along which to defend. Although the stream itself with its surrounding territory may not create extremely difficult obstacles, nevertheless the negotiator

is usually at a disadvantage while in the act of crossing because the defenders may have the opportunity to secure superior terrain on high ground that may face the river bottom. There are three general methods of defense of river lines: on the enemy's side, at the river's edge, and well back from the river.

■ **86. DEFENSE ON ENEMY'S SIDE.**—This method assumes that the defense holds the existing points of crossing. The defending force occupies one or more defensive positions, the holding of which secures the crossings. If practicable, contact is made and delay is initiated while the enemy is still distant from the river. This method of defense is resorted to by Cavalry under conditions which require the enemy to be held for a considerable time, or when the crossings must be kept intact for other forces.

■ **87. DEFENSE AT RIVER'S EDGE.**—*a.* This defense is made with a view of meeting the enemy at the water's edge while he is in the act of crossing. Organization is similar to that of position defense with the main line of resistance at the river's edge. The entire length of the stream available for the enemy's crossing is divided into defensive sectors, and each sector is held by a defending force which can concentrate quickly at any point of attempted crossing. In this method all parts of the threatened line must be held in strength. Comparatively large forces are required for successful defense. This method is a particularly valuable one when the mission is to delay.

b. A successful defense at the river's edge normally requires the following conditions; a narrow frontage in proportion to the strength of the defender; flanks secure; no possible points of crossing outside the defended area; river wide enough to hold the enemy under fire for considerable time while crossing. The nature of the banks on both sides must be considered. Steep banks impede assaulting forces. Cover on the enemy's side facilitates the surprise launching of assault boats and the protection of personnel. Concealed machine gun positions close to the water on the defended bank have excellent fields for grazing fire and greatly strengthen the defense.

■ **88. DEFENSE WELL BACK FROM RIVER.**—This method is of general application and lends itself to decisive action. The

bank on the defended side is held by security and delaying detachments strong in automatic weapons. The main body is located at such distance from the river and with such dispositions as to permit it to move rapidly to any threatened part of the defended front. Its action is usually offensive in nature in that its purpose is to clear the defended side of the river of enemy forces. The normal features of this form of defense are—

- a. Vigorous air reconnaissance into the enemy's territory.
- b. Constant patrolling across the river into the hostile lines to obtain information and identifications.
- c. Constant ground observation of the enemy's territory.
- d. The employment of relatively weak detachments on the near bank of the river. These detachments furnish security, operate, and are organized in accordance with the procedures governing outposts. It is their mission to discover hostile crossings, to meet the leading elements with fire at the river's edge, and to prevent hostile troops from establishing themselves in bridgehead positions before the arrival of the main body. Enemy forces must be prevented from completing any form of bridge, or from launching rafts which will permit crossing of artillery or mechanized vehicles.
- e. The location of sufficiently strong forces at probable points of crossing to prevent other than large forces from crossing the river. This delays the crossing and deployment of large forces until the general reserve can come up and counterattack.
- f. The location of artillery so that it can fire upon the hostile concentrations for the attack and their lines of approach.
- g. The taking up of a position by the main body at a point most central to the probable points of hostile crossing and with good roads leading thereto.
- h. Concealment of movements and dispositions.
- i. Provision for liaison and signal communication.

■ 89. RECONNAISSANCE.—Reconnaissance of the enemy's side of the river is of the utmost importance. Scout cars, motorcycles, and mounted and dismounted patrols are used to conduct reconnaissance and to locate and maintain contact with the enemy. They may be used to delay the advance of the enemy and, when he approaches to attack the river line, the

more mobile patrols withdraw to the flanks to conduct reconnaissance of the hostile flanks and rear to discover where the hostile reserves are to be employed. Combat cars assist the delay by harassing attacks against the flanks of the hostile columns. If unable to remain on the enemy's side of the river, scout cars may observe crossings from the defended side and to the flanks to give warning of any attempt of the enemy to threaten the flanks of the defending force. When forced back across the river, light tanks may be used to counterattack hostile units that have been able to secure a foothold on the defended side.

■ 90. DEMOLITION OF BRIDGES.—All bridges in the area should be prepared for demolition and definite instructions issued by the commander as to what agency or individual is responsible for their destruction and under what situations the bridges will be destroyed.

SECTION V

WITHDRAWALS FROM ACTION AND RETIREMENTS

■ 91. GENERAL.—*a.* Cavalry executes withdrawals from action and retirements in accordance with the doctrines laid down in FM 100-5.

b. Withdrawals from action and retirements being retrograde movements require covering forces for protection against enemy direct pressure and protection against enemy flanking and encircling maneuvers.

c. Cavalry, due to its tactical mobility and method of transporting fire power, is particularly well-suited to execute or cover withdrawals and retirements.

d. These characteristics permit Cavalry to remain in action or in contact as a covering force longer than less mobile troops, and make it particularly valuable for use as protection against enemy flanking attacks and encircling maneuvers.

■ 92. WITHDRAWALS FROM ACTION.—*a.* A withdrawal from action is a retrograde movement by which all or a part of a cavalry force breaks away from an engagement or from immediate contact with the enemy. The withdrawal from action or breaking of contact with the enemy is not a complete action in itself; it is always the initial phase of some other action. Thus, Cavalry withdraws from action and

retires, withdraws from action and takes up a defensive position, or withdraws from action with a view to attacking in a different locality.

b. Taking advantage of interior lines and its cross-country mobility, Cavalry can operate effectively in withdrawing from action against any type of opposing force.

c. When opposed by enemy foot and horse troops, Cavalry is used both in the covering force and for flank protection. The covering force is composed of horse elements and the flank protection force of mechanized elements or of both mechanized and horse elements.

d. Cavalry withdraws from action when opposed by motorized and mechanized troops by—

(1) Using its own mechanized elements to delay the heads of advancing columns at defiles and critical terrain features while the horse elements are withdrawing.

(2) Using porté horse elements to assist mechanized elements, especially in intercepting enemy advance elements at defiles which are some distance from the main body.

(3) Having horse elements withdraw cross-country over terrain that is unsuitable for use of mechanized vehicles.

(4) Making better actual speed across rough terrain than is possible for enemy motorized troops forced to use the same terrain.

(5) Taking advantage of shorter interior routes than those available to the enemy for interception of the movement.

(6) Outdistancing enemy motorized and mechanized units which have been slowed down due to weather conditions, congestion on roads, or destruction of bridges.

(7) Utilizing hasty demolitions, obstacles, and antitank mines.

■ 93. CONTROL.—a. During cavalry withdrawal from action, decentralization of control is necessary to enable commanders of subordinate units to extricate their commands in accordance with the situation in their immediate locality. However, centralized control is regained by the use of assembly areas or by forming the command directly into march column or columns at initial points.

b. Local commanders designate assembly positions for their own units. Each subordinate unit is then conducted from its assembly position to that of the next higher unit or to its place in the march column. When a defensive position

is to be taken up, they may proceed to the sector assigned on the new position.

■ 94. CONDUCT.—*a. General.*—The order in which units withdraw is important. When no part of the unit is seriously engaged, or when opposed to less mobile forces, the entire line may be withdrawn simultaneously. When in close contact with the enemy, on the other hand, terrain should be a governing consideration. Troops in occupation of critical terrain features should be withdrawn last. Troops on the front line in support or in local reserve are often in occupation of terrain which if held would favorably influence the withdrawal of the entire command. The sequence of withdrawal of subordinate units should then be determined by the ability of any unit to cover the withdrawal of other units. In critical situations, it may be necessary to sacrifice a part of the command in order to cover the withdrawal of the force as a whole.

b. Daylight withdrawals.—(1) The cavalry commander designates a general covering force to cover the withdrawal from action of the whole command and regulates the time this covering force is required to hold. The time required to withdraw and assemble the main force is the controlling factor.

(2) The covering force may then constitute the rear guard or the outpost depending on the situation.

(3) Local covering forces are designated and placed in the best available positions by local commanders. The covering positions are selected to the rear and flank of the axis of withdrawal of the unit concerned. The position on the flank insures that its fire will not be masked by the withdrawing troops.

(4) The distance to the led horses or vehicles and the character of the terrain are considerations in determining how close the enemy may approach before withdrawal must begin. In a delaying action, the withdrawal should never be delayed until the enemy's forces are within assaulting distance of the troops occupying the delaying position. A dismounted enemy may be permitted to approach within 200 yards of the position, provided covered routes of withdrawal are available and mounts are immediately at hand. Withdrawals from positions which have been defended for some time, as in position defense, when the enemy is assaulting and in close contact

can best be effected during periods of poor visibility, such as during the hours of darkness. A successful counterattack often creates a situation which favors the withdrawal.

(5) Upon receipt of the order to withdraw, trains and such rear elements as can be spared are withdrawn at once, provided secrecy considerations permit. The local covering forces and the general covering force are moved into their positions promptly. The deployed units move straight to the rear until the smaller units can be assembled. As each subordinate unit is assembled, it is conducted to the assembly position of the next higher unit.

(6) (a) Covering forces protect the withdrawal. These forces detailed from reserves, or least engaged units, are only sufficiently strong to accomplish their mission. The commander designates a general covering force to protect the withdrawal of the entire command. Subordinate commanders designate covering forces to protect their own withdrawal.

(b) In cavalry units, covering forces are usually strong in light machine guns, efforts being made to extricate heavier supporting weapons earlier in the action. Thus the size and composition of a cavalry covering force may consist of a rifle squad with one or one-half light machine-gun squad attached, to cover the withdrawal of a troop; or a rifle platoon, with one or more light machine-gun squads attached, to cover the withdrawal of a squadron or a regiment. It may be necessary to use a reinforced troop to cover the withdrawal of a regiment.

(c) A covering position is preferably located on commanding ground to the rear and near the threatened flank. It should be so located as to cover the routes of withdrawal and the assembly areas of the main body. The time of withdrawal of the covering force may be prescribed by the commander who details it; it may be left to the discretion of its own commander who details it; or it may be left to the discretion of its own commander in conformity with his mission.

(7) A small command, such as a squadron or lesser force, may withdraw from action suddenly, as a whole, when some natural or artificial cover offers protection from hostile fire. The enemy is kept in ignorance of a contemplated withdrawal as long as possible. The existence of cover and conceal-

ment and the distance to the led horses or vehicles determine the time when small cavalry units must abandon the firing line. The led animals or vehicles are held as close to the firing line as is consistent with their safety. During the daylight withdrawals of dismounted units in close contact with the enemy, their rearward movement is similar to movement in the face of small-arms fire in the attack, except that the direction of movement is reversed. Small groups cover each other mutually by fire as they work successively to the rear on their bellies to terrain in which they will find cover for less restricted movement.

c. Night withdrawals.—The basis of success in a night withdrawal is the secrecy with which it can be accomplished.

(1) *Security.*—(a) During a night withdrawal, the outpost or designated fractions of the firing line are left in contact with the enemy. This force is supported by formed elements posted on or near the most dangerous avenue of approach. The elements left in contact with the enemy screen the withdrawal by stimulating great activity. By heavy firing from different positions, reconnaissance patrols or strong combat patrols, by sending up numerous rockets and flares, and by any other available means, they endeavor to create the impression of heavily held lines.

(b) In order to insure the uninterrupted retirement of the main body, a covering force is designated as for a withdrawal by day. The rearward movement of the covering force is deferred until the higher commander is assured that the columns have cleared the initial points or assembly areas, and that the screening force left in contact with the enemy has withdrawn.

(2) *Time of withdrawal.*—(a) When a withdrawal from action is made under cover of darkness, the trains and rear elements are started to the rear immediately after nightfall. The hour at which the front lines are withdrawn depends upon the mission and the situation.

(b) The priority of the withdrawal of combat units depends upon the situation and the subsequent plan of the commander. In the normal case, the units of the front lines are withdrawn nearly simultaneously.

(c) The small security elements left in contact with the enemy during the hours of darkness must be withdrawn

sufficiently before daylight to permit them a period of poor visibility for safe withdrawal, reorganization, and retirement. When the situation permits, the security elements should preferably withdraw long enough before daylight to permit considerable distance to be placed between them and the enemy.

■ 95. MACHINE GUNS AND MORTARS.—The covering force should be strong in machine guns. Close liaison must be maintained with commanders of supporting units. Machine-gun unit commanders must be given timely information of the proposed withdrawal so that they may complete their preparations for a change of position and redistribute the fire missions of their units. In withdrawing from one position to another, light machine guns should remain in the forward position long enough to derive the greatest value from their fire. Unless it is intended to sacrifice the guns, there should always be at least a few riflemen to cover their withdrawal. The guns withdraw on order of the troop commander, if they are kept together as a platoon, or on order of the commander of any smaller unit to which they are attached. Heavy machine guns assist in covering the withdrawal of rifle units but should always have at least a few riflemen to cover their withdrawal. The presence of light machine guns permits the heavy machine guns to withdraw early. Mortars assist in covering withdrawals by operating from defiladed areas and denying favorable avenues of approach to the enemy. All machine guns and mortars can be withdrawn simultaneously or by echelon depending on the situation.

■ 96. RETIREMENTS.—*a.* A retirement is a retrograde movement by which a force seeks to regain freedom of action by moving to the rear and interposing a covering force or rear guard between itself and the enemy. Its purpose is to refuse decisive combat under the situation existing at the time. It is executed in accordance with the will of the commander and with a definite plan. The retirement of a force in contact with the enemy is initiated by a withdrawal from action. Although the delay of the enemy is not the primary purpose of a retirement as it is in a delaying action, the covering force of a retiring command may be compelled to

employ delaying action in order to gain time and space for the retirement of the main body.

b. Troop units on their arrival in the assembly areas, designated in connection with the withdrawal from action, are formed into march columns for their rearward movement. The retirement is initiated on a broad front using all available roads. Horse elements may utilize cross-country routes. As the distance from the enemy increases, the small columns of the main body are consolidated into larger march columns with a view to the organization of strong combat teams. On retirements over considerable distance, night and forced marches are necessary to gain the maneuver room desired by the commander. During the march great care must be exercised to establish the necessary measures to insure the security of the command. Rear, flank, and advance guards are necessary. Great attention must be paid to those measures necessary to neutralize the attacks of enemy combat aviation and mechanized, armored, or motorized units.

c. Cavalry often provides the rear guard, covering force, or other security element of larger forces of all arms. Although delay of the enemy is not the primary purpose of a retirement, Cavalry may find itself compelled to employ delaying tactics in executing those missions of security by which the commander of the whole force gains time and space for the freedom of maneuver of his command. (See FTM 100-5.)

SECTION VI

DELAYING ACTION

■ 97. GENERAL.—a. In executing missions of delay, Cavalry employs defensive tactics, offensive tactics, or a combination of the two.

b. It avoids decisive combat.

c. Every effort is made to surprise the enemy by the choice of delaying positions and by the forms of action used.

d. The maximum amount of time is gained by forcing the enemy to reconnoiter, maneuver, and deploy.

e. The delaying force checks the enemy by bold and aggressive action, mounted and dismounted.

f. It usually withdraws before suffering serious loss unless its missions require more determined resistance.

g. Surprise attacks delivered over previously reconnoitered ground on the heads of hostile columns as they emerge from defiles, woods, or villages, have excellent chance of success.

h. Against foot and horse troops, horse and mechanized cavalry exploits the advantage of its superior tactical mobility. Usually it is subdivided into two or more groups. While one part composed principally of horse elements directly opposes the heads of the enemy's columns, other parts composed of mechanized, porté, and horse elements operate against the enemy's flank and rear. Against a purely cavalry force, a large reserve should be held out initially.

i. Against motorized and mechanized troops, the delaying force is kept well in hand and a strong reserve is retained. Horse elements are used principally against the heads of enemy columns. They use their tactical mobility to infiltrate between these columns and to attack and harass their flanks, principally by fire action. Mechanized elements carry out wide, continuous reconnaissance, and attack and harass the enemy's flanks and rear.

■ 98. MECHANIZED ELEMENTS.—*a.* Scout cars and motorcycles conduct reconnaissance to locate and maintain contact with the hostile forces. They may be directed to delay the advance of the enemy at a distance ahead of the horse elements. When the enemy gains contact with the main delaying force, scout car and motorcycle elements withdraw to the flanks and toward the hostile rear to discover and counter hostile envelopments. When the horse elements withdraw, mechanized elements may be used to delay the hostile advance until the withdrawal is effected, to cover the withdrawal, and to effect delay between successive positions. They then continue reconnaissance as before. Available reconnaissance vehicles armed with antitank weapons can be used in emergency as a mobile reserve to meet surprise attacks by enemy mechanized elements, when such additional potential antitank weapons are more vital to the successful accomplishment of the mission than the possible reconnaissance use of the vehicles.

b. Light tanks of the armored troop assist the operations of the scout car and motorcycle elements. They are of particular value for attacking the flanks of the enemy.

■ 99. EMPLOYMENT.—Cavalry may resort to delay while acting as a covering force of other troops; while operating as ad-

vance, flank, or rear guards, and security detachments; when covering withdrawals and retirements; when required as a temporary expedient pending a favorable opportunity for offensive action; and when operating as detachments covering the flanks of battle or delaying the arrival of hostile reinforcements.

■ 100. CLASSES OF DELAYING ACTION.—*a.* Delaying actions in which Cavalry participates may be executed by either of two methods:

(1) Delay in a single position, when the delaying force must hold its position at all costs for the time indicated by its mission.

(2) Delay in successive positions, when the enemy is delayed as long as possible without imperiling the safe withdrawal of the delaying force from each of a series of positions carefully selected in advance.

b. In either class of delaying action, effective delay may be secured by a combination of offense and defense. It is sometimes advisable to allow the enemy to come to close range before opening fire and then to surprise him. Such action makes him more cautious and slower in future advances.

■ 101. DELAY IN SINGLE POSITION.—*a.* A decision to delay in a single position is indicated when—

(1) The terrain is not well-suited to delaying action in successive positions.

(2) The requisite delay is so short that it can be secured in a single position without seriously engaging the delaying troops.

(3) The area of operation is limited, and a withdrawal to a second position does not permit the accomplishment of the mission.

(4) There is a choice between a single strong position with secure flanks and a succession of weaker positions.

b. Delaying action in a single position amounts to a defense of a position and is accomplished by the methods described in section I. The degree of organization is dependent on the time available to the delaying force. The defensive phase of this operation is accompanied by vigorous harassing action in front of the position, directed against the enemy flanks and rear.

■ 102. DELAY IN SUCCESSIVE POSITIONS.—*a. General.*—(1) Delaying action in successive positions consists of a series of temporary defensive operations each of which is followed by a withdrawal from action and retirement to the next delaying position in rear.

(2) Only the first position or the first two positions may be occupied initially; in the latter case, the troops occupying the first position may withdraw when forced to do so to a third position. This is followed by a series of leap-frogging movements to the rear. The leap-frogging maneuver is more suited to relatively large commands than to small ones.

(3) Opportunity is continuously sought in this form of delay to employ strong forces in offensive action against enemy flanks and rear. Long-range fires of heavy machine guns on enemy columns, from flank positions suddenly seized by mobile cavalry elements, often accomplish the results desired.

(4) In the defensive phase of this method of delay, Cavalry continuously opposes the hostile advance. This opposition is accomplished by the decentralized operation of small forces in front of the first delaying position and between successive positions. The intensity of delay reaches its peak on each delaying position. Here centralized control of the entire command is regained, and plans are made and orders issued for the next phase of the delaying operation of the whole force.

b. Positions.—(1) Should the mission so indicate, the commander selects an axis or zone of delay which will be the guiding direction of his future actions. He may be forced, either by the enemy or by the terrain, to leave this axis or zone temporarily, but he constantly endeavors to return to it.

(2) Successive positions on ridges are selected along the general axis, upon each of which the defending force is disposed successively with the object of causing the enemy to deploy his entire command for coordinated attacks on each position. When hostile forces comprise artillery elements, the distance between successive delaying positions should be such as to require displacement of the enemy light artillery for his attack of each position. Positions are organized as completely as the time available permits.

(3) Observation coupled with a good field of fire at long and mid ranges, 2,500 to 600 yards, is desirable. Fire at such

ranges causes early and wide deployments by the enemy. The positions should be such that the enemy must attack them, consume a long time in turning them, or abandon his mission. The flanks must be strong to avoid being easily turned. Full use is made of natural and artificial obstacles. Cover for led animals or vehicles, close to the firing line, should be available. Each position should favor rapid withdrawal under cover. Parallel ridges or unfordable streams which cross the axis of delay greatly favor delaying operations. In open and regular terrain with little available cover, the occupation of positions on or near the topographical crests of ridges and hills facilitates withdrawals.

c. Control.—The initial designation of at least two delaying positions and the axis or zone of action facilitates coordination and control. Reconnaissance of rear positions and routes thereto is made early. The commander controls the action by personal observation and contact with subordinates, and by the employment of all possible communication agencies, including liaison agents. Withdrawals must be anticipated and carefully planned. Although control is decentralized to subordinate commanders during the actual movement from one position to another, it is regained on each delaying position by the commander of the whole force.

d. Dispositions.—(1) Contact is maintained with the enemy by all ground and air reconnaissance means available, horse patrols, scout cars, and motorcycles. Wide reconnaissance to the flanks is necessary to locate hostile enveloping and turning movements and to seek opportunities for flank attack.

(2) The delaying force is disposed on the position on a relatively wide front with little depth. It covers by fire all avenues of hostile approach. An adequate part of the delaying force must be retained along the axis of delay between the enemy and the troops or positions being covered. Small delaying forces deploy the major part of the force on one position holding out sufficient reserves to meet enemy developments. The bulk of the supporting weapons is on the firing line across the axis of delay to secure maximum effect in the initial stages of the fire fight, except that, when confronted by enemy mechanized elements, available antitank weapons must be held mobile ready to meet such an attack.

(3) Platoons are disposed as combat groups at extended intervals to block the most likely approaches and to cover

the intervals by fire. A platoon may occupy a frontage of only 150 to 200 yards, but a troop by extending the intervals between its platoons may occupy 1,200 to 1,500 yards, and a squadron, reinforced, 2,500 to 4,000 yards.

(4) When the command is to be withdrawn before the enemy drives home his attack, only small local reserves need be held out. The most probable use of these reserves is to cover the withdrawal. They should, therefore, be posted well to the rear and somewhat to a flank.

(5) Generally led horses and vehicles are kept mobile and under cover. The nearer the means of transportation are kept to the firing line, the longer the fire can be continued and the moment of withdrawal delayed. When operating against Cavalry or other mobile forces, it is necessary to provide a special guard for led horses or vehicles.

(6) Cavalry in delaying action disposes its trains so as to serve the troops without interfering with their withdrawal. This usually requires part of the ammunition and evacuation elements to be near the troops while the remainder, together with the kitchen and baggage elements, are held well to the rear in a concealed, easily protected locality.

■ 103. MACHINE GUNS, ANTITANK GUNS, AND MORTARS.—*a. Light machine guns.*—The light machine gun is of great value in causing the enemy to deploy beyond the range of effective rifle fire. As the delaying force may, and usually does, withdraw before the enemy gets within close range, the light machine gun in small commands may be the only weapon to fire in some positions. It normally operates under troop control or is attached to platoons in combat groups. It should, therefore, be given the choice of position by the rifle unit under the control of which it may be operating. No matter what the disposition, all such guns should be in position at the beginning of the action. None should be kept in reserve. They should fire at the most remunerative targets, leaving fire on enemy individuals, who may infiltrate forward, to the riflemen.

b. Heavy machine guns.—(1) The heavy machine gun is the most important weapon within the regiment for delaying purposes. Lacking artillery, a command in a delaying position opens fire first with its heavy machine guns. These guns may be kept together by a regimental commander but, since each delaying position is usually thinly held and

therefore wide, it is more normal for the regimental commander to attach one or more platoons of machine guns to each rifle squadron, especially should the squadrons occupy a position abreast. In this form of action, the squadron itself may operate on a wide front with units widely separated. In such a case, to insure control, the squadron may attach machine-gun sections or even squads to subordinate units. The guns may be concentrated to cover successive withdrawals, but usually can better cover their initial missions of fire at long ranges on enemy groups by decentralization of control. The guns should be posted on commanding ground with good observation and good fields of fire to the front up to the limit of their usable range. Fields of fire at close range are not so important. All guns should be placed in action. Flanking positions are not in this case necessarily the best, since most of the fire will be on the heads of columns before they deploy, with an effort made to catch them in defiles, such as bridges, saddles in the ground, and draws. Guns should be placed in defiladed positions when possible. Positions permitting overhead fire are advisable. Covered routes of withdrawal are desirable.

(2) Gun positions for both light and heavy machine guns in the second position should be reconnoitered before occupation. This is usually done by the second-in-command of the unit concerned. In large commands, heavy machine guns may sometimes be ordered to occupy, temporarily, intermediate delaying positions between the main delaying positions to cover the withdrawal of forward elements. Guns in the intermediate positions should be ready to fire before those in the advance position withdraw.

c. Antitank guns.—(1) Due to the nature of delay, which is usually on wide fronts, care must be exercised that the effect of antitank weapons is not lost through dispersion. All commanders in control of such weapons should hold a part of their guns in mobile reserve available to move rapidly to previously reconnoitered positions from which to meet surprise mechanized attacks. The 37-mm antitank gun is particularly valuable as a reserve weapon due to its high rate of road mobility. For the same reason vehicular mounted caliber .50 guns which are available are effective as reserve weapons.

(2) When in position, antitank weapons should be placed well out toward the probable avenues of approach of armored vehicles, and in order to avoid disclosing prematurely their location, should withhold fire on enemy vehicles until they are within effective antitank fire range, generally under 1,000 yards. They should be placed, when possible, in such a manner that guns are mutually supporting. Several guns should be able to concentrate their fire on likely avenues of approach by hostile mechanized vehicles. In selecting positions, attention must be given to protection of led horses of pack weapons. Vehicles on roads or in defiles present the best targets. In emergencies, the guns may also be used to fire on machine guns. Regimental guns may be held under regimental control or attached to squadrons. They should have a suitable escort of riflemen to provide close-in protection.

d. Mortars.—(1) Mortars should be so located that their fires can be brought to bear on areas which flat trajectory weapons are unable to reach. They should be able to fire on covered approaches and assembly areas available to the enemy. They are located in defiladed positions close to the firing line. Depending on the extent of front to be occupied, they may be held under regimental control or attached to squadrons.

(2) In delaying action, screening smoke fills an important requirement in covering withdrawals or concealing movements or dispositions. When employed, it should normally be placed on the hostile force, or used directly on located enemy observation points. When properly placed on enemy installations, it allows positions to be occupied longer and permits withdrawal with fewer casualties. The use of smoke must be with a proper evaluation of existing atmospheric conditions to assure that the effect will not be detrimental to our own troops.

CHAPTER 4

RECONNAISSANCE

■ 104. GENERAL.—*a.* Reconnaissance is the operation of obtaining information in the field by troops sent out for that purpose. Its function is to provide information upon which commanders may base their decisions and plans.

b. Cavalry executes reconnaissance in accordance with the doctrines laid down in FM 100-5.

c. In order to plan and conduct operations, as well as to guard against surprise, a commander should know as much as possible of the theater of operations and particularly of the enemy's capabilities. Information desired may be of the enemy, the terrain, and the resources of the theater of operations. Information concerning the enemy may include his location, disposition, strength, organization, capabilities, movements, attitude, equipment, and morale. Information concerning the terrain may include battle positions, character of roads, streams, cover and concealment, and bivouac areas. Information of the resources of the theater of operations may include attitude of inhabitants, supplies of food, forage, construction materials, housing facilities, utilities, and availability of transportation.

d. The essential elements of information constitute that information of the enemy or the terrain, or of meteorological conditions in territory held by the enemy, which a commander desires in order to make a decision, conduct a maneuver, avoid surprise, or enable his staff to formulate the details of a plan. These essential elements are designated for the purpose of focusing the attention and activities of all collecting agencies on that information which, from the viewpoint of the commander, is necessary at a particular time. Until rescinded they constitute the general directive for all information collecting agencies. They may be expressed either in the form of questions or of items of information desired.

e. Cavalry, due to the mobility of its mechanized elements on roads and of its horse elements on practically any type of terrain, is particularly well-suited to perform reconnais-

sance missions using horse elements, mechanized reconnaissance elements, or a combination of the two.

f. Cavalry horse elements are the surest means of securing information under all conditions of weather, terrain, and hostile activity. However, the distance it can travel in a given time and the number of hours it can continue on the move are directly controlled by the powers and limitations of the horse.

(1) If preceded by a mechanized reconnaissance detachment or patrol, the horse reconnaissance detachment generally moves at a uniform rate along the prescribed axis of reconnaissance, sending out only the patrols necessary for its own security and for reconnoitering such areas as mechanized reconnaissance elements cannot penetrate. When the preceding mechanized elements have gained contact with the enemy, have been held up, or have side-slipped hostile resistance, horse patrols are sent out to cover thoroughly the zone of reconnaissance or, if no zone has been designated, the route or the locality in which the enemy was reported to be.

(2) If not preceded by a mechanized reconnaissance detachment or patrols, the cavalry reconnaissance detachment must employ horse patrols from the start to cover the principal routes and terrain features within its zone of reconnaissance. The strength of patrols sent out initially is determined by the probability of hostile contact. When patrols from the detachment are operating on a wide front, the rate of advance of the detachment is slower. Patrols move by bounds. As the probability of contact with the enemy increases, additional patrols are detailed and the distance between bounds decreases.

g. Cavalry mechanized elements can cover longer distances on roads and suitable cross-country terrain and can continue on the move for longer periods than can horse elements. For this reason, they are used for more distant reconnaissance, both to the front and flanks, and to spare horse elements from unnecessary marching and fatigue.

h. Mechanized reconnaissance elements not engaged on other missions, and units which have been forced to the flanks by the approach and development of opposing forces, execute battle reconnaissance. They strive especially to determine the enemy flanks and pay particular attention to the loca-

tion and movement of hostile mobile reserves and reinforcements composed of horse or mechanized cavalry elements.

■ 105. MISSIONS.—Cavalry performs distant, close, and battle reconnaissance generally in accordance with the doctrines laid down in FM 100-5.

a. *Distant reconnaissance*.—Distant reconnaissance by Cavalry is made for the purpose of procuring information upon which to base the strategical decisions and plans of the commander of the force under which the Cavalry is operating.

b. *Close reconnaissance*.—Close reconnaissance furnishes the commander with the information upon which he makes his tactical decisions. It constitutes the basis for engagement with the enemy and begins as the opposing ground forces approach contact. The forces employed in close reconnaissance may vary in strength from a small cavalry patrol to a force composed of all arms.

c. *Battle reconnaissance*.—Battle reconnaissance aims chiefly to obtain information relative to the combat value and tactical disposition of the enemy and the possibilities of the terrain. It includes continuous observation of the activity of all enemy forces engaged in combat or in immediate contact with our principal forces before, during, and after battle.

■ 106. ZONES, LOCALITIES, AND ROUTES.—a. When a commander assigns a reconnaissance mission to Cavalry, he may assign a zone of action, designate a locality or area, or assign an axis or route. The boundaries of a zone are not to be construed as limiting the movements of the units, but rather are guides to indicate areas of responsibility for reconnaissance. The smaller the element, the more definitely are limits prescribed in order to insure control, but the maximum freedom of movement that the situation warrants is allowed.

b. (1) When the enemy is disposed on a broad front, or when his location is in doubt, a zone of action may be assigned. Factors to be considered in determining the width of the zone of action are the terrain, the road net, the strength of forces to be employed, the nature, strength, disposition, and aggressiveness of the enemy, the attitude of the civil population, and the mission of the main force.

(2) The following table, for use as a guide only, shows in miles the width of a zone that cavalry units can cover under favorable conditions:

Unit	Horse cavalry	Mechanized cavalry
	<i>Miles</i>	<i>Miles</i>
Platoon.....	2½-5	5
Troop.....	5-10	10-20
Squadron.....	¹ 10-20	30-50
Regiment.....	15-30	² 30-50

¹ Horse or porté.² Horse and mechanized.

c. The time-distance which reconnaissance detachments operate in advance of the main body varies from 1 hour to 2 days. Normally they operate about 1 day's march in advance of the main body. The distance should be such as to permit the information desired to be secured and furnished to the main body in time to be of value.

d. (1) A reconnaissance detachment of horse cavalry covering a zone cannot be expected to maintain a sustained rate of advance greater than 4 miles per hour except under most favorable conditions.

(2) A mechanized reconnaissance detachment cannot normally maintain a sustained rate of advance greater than 15 miles per hour. The practicable rate will depend on the road net to be covered and the obstacles or resistance encountered.

e. When assigned a zone, the reconnaissance detachment commander may redistribute the zone by breaking it down into smaller zones and assigning small detachments or patrols to reconnoiter them. Also successive lines which patrols or detachments, or both, are to reach by a specified time are designated.

f. When accurate information has disclosed the presence of the enemy in a definite area, then that locality or area is assigned for reconnaissance. When cooperating with aviation, cavalry reconnaissance of particular localities pointed out by the aviation may be indicated rather than reconnaissance in a zone.

g. When information indicates the enemy's advance is by a definite route, a route for reconnaissance is generally

designated. The presence of special terrain features, such as lakes or mountain passes, may also make it advisable to assign routes for reconnaissance, even though zones would otherwise be preferable.

h. Localities and routes of reconnaissance are more apt to be used than zones of reconnaissance when aviation is cooperating with Cavalry.

■ 107. PLANS.—*a.* It is the duty of the cavalry commander to coordinate the action and to maintain a continuing supervision over all the information-collecting agencies at his disposal in the search for essential information. The orientation of this search for information is assured by an intelligence plan as outlined in FM 30-5. The plan indicates the elements of information which are essential to the commander in the execution of his plan of action and in the coordination of the security of his command. Based on these essential elements of information, instructions for the collection of the information are issued to the subordinate agencies, concurrent with appropriate requests made on higher and adjacent units.

b. In performing his duty of coordination and supervision of his collecting agencies, the cavalry commander of a unit the size of a squadron or larger is assisted by the intelligence section of his staff. The intelligence section recommends the detailed missions for the collecting agencies; collates, evaluates, and interprets the information received; and disseminates the resulting military intelligence to subordinate, adjacent, and higher units in the form of periodic reports as ordered by the commander. (For form of intelligence report see FM 101-5.) These reports keep the commander and interested staff officers informed of the enemy situation and of the deductions relative to the enemy's capabilities. When possible, they estimate the relative probability that the enemy will adopt certain lines of action.

c. To facilitate preparation of detailed reconnaissance missions the following suggested form prepared by the intelligence section of the staff is of value. (See also par. 109b.) Coordination with the operations section is usually required with reference to the agencies to be employed.

FORM FOR INTELLIGENCE (G-2) PLAN

Phases or periods of the operation	Essential elements of information	Analysis of essential elements of information, and specific orders or requests	Collecting agency or other source							Hour and destination at which information is to be reported	
			A	B	C	D	E	F	G	H	
4:00 P. M. 21 January 1941 to 6:30 P. M. 22 January 1941.	Are there Red forces in the area between the SUSQUEHANNA and POTOMAC RIVERS east of SOUTH MOUNTAIN capable of interfering with the advance of the 1st Cavalry Division? Will Red advance from concentration area into the area given above? If so, how, where, and in what strength?	Presence of Red forces of a battalion or larger—foot, horse, motorized or mechanized. Red reconnaissance and combat aviation operating in area. Persistent gas in area. Red motorized and mechanized elements capable of movement into the area in time to interfere with movement of the 1st Cavalry Division. Movement of Red troops in force through the passes of SOUTH MOUNTAIN and over the POTOMAC RIVER crossings.	X X X X X X X X X X	Unless otherwise required, information will be reported, when obtained, to the commander who directed the reconnaissance. G-2 (S-2) may specify when and where essential information must be reported in order to be of use to the commander.							

■ 108. DETACHMENTS.—*a.* Reconnaissance detachments are employed when it is necessary to have a self-sustained unit well to the front to obtain timely information of the enemy.

b. The main duty of a reconnaissance detachment is to push forward in search of information in accordance with assigned missions. It must overcome or avoid hostile resistance encountered in order to obtain the information required.

c. Reconnaissance detachments are not charged with providing security for the main body of the force for which it is operating. However, reconnaissance detachments and all of its elements are charged with providing timely warning to the main body of the approach of hostile mechanized elements and of combat aviation. This mission is performed automatically without additional or special instructions. Pre-arranged radio or visual warning signals are employed for the transmission of this information.

d. When reconnaissance detachments are stopped or driven back, the main body goes to its assistance only in case of necessity.

e. When the distance between the opposing main bodies is so reduced that there is no longer room for the operation of reconnaissance detachments, they are withdrawn or used to cover the developments for combat of the main body.

f. The strength and composition of a reconnaissance detachment depend upon its mission, the distance it must travel, the number of patrols it must furnish, the terrain, the attitude of the civilian population, and the nature, strength, and activity of the enemy.

g. Reconnaissance detachments must be given sufficient strength and means of communication to accomplish their mission. Frequently in order to provide necessary strength and means of communication, attachments are necessary and are made in proportion to the size of the detachment and in accordance with the mission to be executed.

h. A squadron of horse cavalry may have attached to it any or all of the following: one section or platoon of scout cars; one squad of motorcycles; two motorcycle scouts; two intelligence scouts (motorcycle); a pack radio; a platoon of heavy machine guns; a platoon of caliber .50 machine guns; a 37-mm antitank gun; and necessary administrative, maintenance, and transportation facilities.

i. Mechanized units of Cavalry, due to their organization, characteristics, and organic weapons and communications, rarely require attachments other than intelligence scouts and possibly additional motorcycles, when performing their normal mission of reconnaissance as a detachment.

j. At times engineers, artillery, and other troops may be attached to reconnaissance detachments.

■ 109. INSTRUCTIONS TO DETACHMENTS.—a. When numerous reconnaissance detachments are employed, it is generally necessary for the sake of clarity and coordination to issue written instructions for their employment. They contain the information and instructions usually promulgated in field orders. They state definitely the information desired, the place and latest hour at which it must be received, the route or routes to be followed or the zone of reconnaissance, and the line which detachments are to reach by a specified time. Where several missions are given, their relative importance is stated.

b. Below is a suitable form for use in issuing intelligence instructions to reconnaissance detachments.

Issuing unit
Place of issue
Date and hour of issue

Reconnaissance instructions

No. _____

Maps:

1. SITUATION.—(So much of the information normally contained in paragraph 1 of a formal field order as will be of value to the CO of a Patrol or Rcn. Det.)

2. DECISION OR MISSION OF FORCE SENDING OUT PATROL OR RECONNAISSANCE DETACHMENT.

NOTE.—This paragraph should be omitted from written instructions to small detachments or patrols when there is a possibility of these instructions falling into enemy hands.

3. RECONNAISSANCE AGENCIES.

a. _____, _____ Observation Squadron:

Reconnaissance of zone or area: _____ M. to _____ M. (period of time).

Zone boundaries:

Missions (in order of priority) and time reports to reach CP:

b. Detachment No. —:

Hour of departure:

Zone boundaries: (Area, axis, or route.)

Objectives or phase lines; time to be reached:

Axis of march:

Missions (in order of priority) and time reports to reach CP:

Duration:

c. *Detachment No. —:**Hour of departure:**Zone boundaries: (Area, axis, or route.)**Objectives or phase lines; time to be reached:**Axis of march:**Missions (in order of priority) and time reports to reach CP:**Duration:*d. *General:*4. **ADMINISTRATIVE DETAILS.**—(Information contained in paragraph 4 of a formal field order; i. e., trains, supplies, etc.)5. **COMMUNICATION.**—(Communication, advance message centers, CP's of main body, etc.)-----
(Signature)

Authentication (on copies only):

Annexes:

Distribution:

110. CONDUCT OF DETACHMENTS.—*a.* In general, reconnaissance detachments perform their missions by moving the bulk of the detachment along a road or other axis of the zone on the route or toward the locality to be reconnoitered. Patrols are used to reconnoiter roads and routes parallel to the axis road and on lateral roads and routes connecting them. When reconnaissance on the roads is not sufficient thoroughly to reconnoiter the zone or locality, or where a suitable road net does not exist, it is necessary to march the detachment or to send patrols across country.

b. In horse elements, patrols are composed of horsemen, varying in size from two or more troopers to a platoon, with necessary reinforcements, commanded appropriately either by a noncommissioned officer or an officer.

c. In mechanized elements, patrols are composed of mechanized vehicles varying in size from two vehicles (motorcycles, scout cars, or a combination of the two) to a platoon of scout cars, reinforced by motorcycles, commanded appropriately either by a noncommissioned officer or an officer.

d. Horse cavalry patrols on reconnaissance cover less distance and make slower progress along roads than do mechanized patrols, but for cross-country missions and reconnaissance of woods and rugged terrain, or when operating under adverse weather conditions, they are the fastest and surest means of ground reconnaissance.

e. Mechanized cavalry patrols can cover greater distances faster than horse elements on roads and across country on suitable terrain under favorable weather conditions. However, to reconnoiter woods, rugged terrain, or cross country

under unfavorable weather conditions, mechanized patrols have to reconnoiter dismounted, which slows up their operation to an extent dependent upon the frequency and distance that the dismounted patrols have to operate.

f. Reconnaissance detachments composed both of horse and mechanized elements of Cavalry operate by using each element on the patrol missions for which it is best suited. Thus, mechanized patrols are used primarily on distant missions, on roads, and for reconnaissance of suitable cross-country terrain. Horse patrols are thereby conserved. Horse patrols are used for close-in reconnaissance and to perform missions for which mechanized patrols are less well-suited.

g. A reconnaissance detachment having been assigned a zone, locality, or route to reconnoiter, the detachment commander decides upon a plan for the reconnaissance of his area. This plan includes the number and size of the patrols to be used; missions; zones, localities or routes for each patrol; lines or points each patrol will reach at specified times; or a rate of march for patrols. The plan indicates when and where messages will be sent and specifies, when appropriate, definite times or periods for which reports will be made.

h. In distributing patrols for reconnaissance and in assigning missions, the cavalry detachment commander gives consideration to the points of most decisive importance to his mission. He assigns greater strength and more aggressive missions to patrols operating in decisive zones. Initially he generally finds it advisable to curtail the strength of patrols. The allotment of too large a proportion of his strength to patrols results in inadequate relief or support of them and reduces his combat power. Generally, not more than one-third of the strength of a reconnaissance detachment should be employed on patrol duty. This affords a reasonable reserve of combat strength in the main body of the detachment and also permits patrols to be relieved daily.

i. Although the patrols sent out from a reconnaissance detachment can generally best perform reconnaissance missions by stealth, it is frequently necessary for a detachment to engage in combat when its patrols are unable to penetrate the hostile screen. When combat becomes necessary, the detachment commander should employ his maximum combat strength at the time and place and under such condi-

tions as appear most advantageous to accomplish his mission. Combat generally centers around defiles or around commanding terrain where observation of the hostile dispositions can be obtained. The commander should avoid becoming seriously engaged with a superior force and should be prepared to break off an engagement when success appears doubtful or remote. Where possible, he seeks "soft spots" in the hostile screen, side-slips determined resistance and, when the enemy is encountered in position, constantly seeks the hostile flanks and rear.

j. The commander of a reconnaissance detachment keeps his patrols well in hand and maneuvers his main body at such a distance that he can support the patrols effectively when they are held up by strong hostile forces.

k. A reconnaissance detachment, which has established contact with enemy main forces, keeps them under surveillance through its patrols and follows the enemy's movements. It takes advantage of gaps between hostile elements to penetrate within the enemy's lines, to explore the gap, and to reconnoiter and report the enemy's dispositions.

l. Messages from patrols, prisoners, inhabitants, and documents are examined by the reconnaissance detachment commander, and information is forwarded to the main body by the quickest and most reliable means available. Radio, automobiles, scout cars, mounted or motorcycle messengers, and impressed motor transportation may be used. In friendly or occupied territory, commercial wires should be used wherever practicable. Captured prisoners are evacuated promptly by such means as are available, together with a digest of information obtained from them.

CHAPTER 5

SECURITY

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SECTION I

GENERAL

■ 111. GENERAL.—*a.* Security embraces all measures taken by a command to protect itself against annoyance, surprise, observation, and interference by the enemy.

b. The object of security is retention of freedom of action for the principal elements of the command involved.

c. Provision must be made for continuous and adequate security under all tactical situations.

d. Security measures must be coordinated and must provide for all-around protection from both ground and air. Special security measures are needed for protection against mechanized units and combat aviation.

e. Each commander is responsible for the security of his unit. The superior commander prescribes security measures for the command as a whole and coordinates those adopted by subordinate commanders.

f. Security is provided by the use of small groups or detachments which are located with respect to our own forces.

g. Reconnaissance missions, other than those incidental to security, are assigned to security forces only when no conflict between missions results.

h. The minimum number of troops is used for security.

i. Security forces may attack, defend, or delay to accomplish their missions.

j. Passive security measures limit the effectiveness of hostile ground attacks and harassments and air observation and attack.

■ 112. SECURITY MEASURES.—*a.* The principal security measures include active measures, such as reconnaissance, the employment of security detachments, and the use of artificial obstacles; and passive measures, such as the distribution of troops and their readiness for action, the utilization of the terrain, including natural obstacles, and concealment afforded by the use of natural cover, camouflage, and movements at night. All security measures must include an adequate warning service, comprising both observers and means of communication, to warn of hostile dispositions and operations.

b. The reconnaissance referred to is that provided by the regular reconnaissance agencies of the command as a whole. Information is the basis of the measures taken by a command for its security, and the effectiveness of security measures rests largely upon the timeliness, accuracy, and completeness of this information. However, security detachments should not be given reconnaissance tasks which are not incidental to their primary missions of security.

c. The combat action of all security detachments is regulated with reference to the requirements of the main body of the command. For this reason, the commanders of these detachments must be kept informed of the situation and of the plans of the commander of the whole force.

■ 113. SECURITY DETACHMENTS.—*a.* Security detachments are elements of a command assigned the primary mission of protecting the main body. On the march, security detachments are called advance guards, rear guards, flank guards, and march outposts; in camp, in bivouac, or in a defensive position, they are called outposts; in combat, combat patrols and covering detachments. The use by a command of advance, flank, and rear guards simultaneously and of an all-around outpost is indicated when opposed by a mobile enemy. Then, especially, economy must be exercised in order to prevent depletion of the main body.

b. Security detachments have one main function—to protect the main body from surprise, observation, and inter-

ference by hostile ground forces. This is accomplished by preventing the enemy from observing the size, dispositions, and composition of the main body; by warning of the approach of hostile forces, especially mechanized or air; by preventing hostile observed fire into the main body; by pushing back or destroying small bodies of the enemy; and by delaying the enemy's advance in force to give the main body time to prepare for action.

c. Information of the enemy's forces, of the terrain, and of the road net is obtained by observation of the enemy and contact with his forces, and by movements incident to the performance of the assigned security missions.

d. In general, with the exception of covering detachments, the formation of security groups is similar and usually consists of two echelons: first, reconnaissance and, second, combat.

e. The strength of a security detachment depends upon the mission assigned it, and is governed largely by the size and composition of the command, the terrain, the visibility, the enemy, and the training and physical condition of the troops.

■ 114. ADVANCE BY BOUNDS.—*a.* Security detachments normally move by bounds unless prevented by darkness, fog, or the rapid rate of march of the main body. An advance by bounds is accomplished by an element moving at an increased rate of march to reach some important terrain feature which possesses tactical advantages either for observation or combat. The smaller the element and the more easily its gaits or speed can be changed, the shorter and more frequent are its bounds.

b. A bound of a forward element should not be so great as to place it beyond supporting distance of the next succeeding element.

c. A bound of a rear element should be under the protection of the element next in front.

d. An advance by bounds has several important advantages:

(1) It enables a forward element to reconnoiter the terrain before the following element has closed up.

(2) It permits the crossing of terrain that may be under hostile observation or fire in the shortest time.

(3) It provides opportunities for resting and watering horses, for servicing vehicles, and for the interrogation of inhabitants.

(4) It facilitates the coordination of the advance.

SECTION II

ADVANCE GUARDS

■ 115. GENERAL.—*a.* An advance guard is a security detachment which precedes the main body on the march and whose general mission is to prevent unnecessary delay in the advance of the main body and to protect it against surprise and observation by hostile ground forces.

b. (1) Cavalry advance guard may comprise horse elements, mechanized elements, or a combination of the two.

(2) Horse elements of Cavalry are suitable for use as advance guards for foot and horse troops.

(3) Mechanized elements of Cavalry, due to their vulnerability to ambush and their unsuitability for sustained defense, are not well-suited for performance of advance guard duty unsupported. Their use for this purpose is confined to the performance of advance guard duty for mechanized and motorized units when acting alone.

(4) An advance guard may be composed of both horse and mechanized elements. When so constituted the bulk of the mechanized elements are used in patrols and flank detachments for distant security missions primarily along roads. A portion may follow the advance guard and be used for communications and the performance of special patrol missions when needed. The horse element performs close-in patrol duty and reduces resistance when it is met.

(5) Mechanized vehicles may be attached to an advance guard, or they may be directed to cooperate with the advance guard. They are used principally for forward and flank reconnaissance up to 1 or 2 hours' march in advance of the advance guard, for liaison between elements of the advance guard and with parallel columns, and as communication agencies. They provide timely warning of the approach of hostile air or mechanized threats. Depending upon the situation, they may seek to delay hostile ground forces by harassing attacks.

■ 116. MISSIONS.—The missions of an advance guard are to—

a. Guard against surprise and to obtain information by reconnoitering to the front and on each side of the axial route of march.

b. Push back small parties of the enemy and prevent their observing, firing upon, or delaying the main body.

c. Check the enemy's advance in force long enough to permit the main body to prepare for action.

d. Determine the strength and location of the hostile lines and flanks when the enemy is encountered, but avoid bringing on a general engagement unless empowered to do so by the commander of the whole force.

e. Remove obstacles, repair roads when necessary, and otherwise facilitate the uninterrupted march of the main body.

f. Seize and hold terrain features favoring future action of the command as a whole.

g. Clear refugees from the route of march.

h. Give timely warning of the approach of hostile aviation and mechanized forces.

■ 117. STRENGTH AND COMPOSITION.—The strength of a cavalry advance guard varies from a very small fraction to about one-third of the command. The following table may be taken as a guide, bearing in mind that the tactical situation and size of the command determine the proper strength of the advance guard:

Unit	Appropriate advance guard	
	Horse cavalry	Mechanized cavalry
Platoon.....	½ squad.....	2 motorcycle scouts.
Troop.....	1 squad.....	2 motorcycle scouts, 1 section of scout cars.
Squadron.....	1 platoon (rifle)..... 1 machine-gun squad (light). 1 caliber .50 machine-gun Motorcycles. ¹	1 section of motorcycles, 1 platoon of scout cars.
Regiment, horse.....	1 troop (rifle)..... 1 section heavy machine guns 1 section caliber .50 machine guns. ¹	1 section scout cars. Motorcycles.
Regiment, horse and mechanized.		1 platoon of motorcycles. 1 reconnaissance troop (less 2 platoons). 1 pioneer and demolition squad. ² Antitank gun, 37-mm. ²
Brigade.....		1 squadron (rifle). 1 platoon heavy machine guns. 1 platoon caliber .50 machine guns. ² 2 antitank guns, 37-mm. ² 2 sections scout cars. Motorcycles.
Division.....	1 regiment (horse)..... 1 battery Field Artillery. ²	1 platoon antitank guns, 37-mm. ² Motorcycles.

¹ Antitank guns, 37-mm.² When situation and mission demand.

■ 118. FORMATION.—*a.* A large advance guard is divided into a support and a reserve. In an advance guard consisting of less than a squadron the reserve is generally omitted. The support is divided into an advance party and a support. The advance party sends forward a portion of its strength, usually about one squad, called a point. If any of the portions of an advance guard are unnecessary, the rear elements are the first to be omitted. Thus the advance guard for a troop may consist of a patrol of one squad which corresponds to the point of larger advance guards. The advance guard for a squadron may consist of a platoon which corresponds to the advance party of larger advance guards.

b. The formations taken by an advance guard vary with the situation. When contact with large hostile forces is not imminent, the formation of an advance guard is characterized by comparatively great depth and little breadth, elements being progressively stronger from front to rear. When information is received indicating that contact with large hostile forces is imminent, or when it is possible for hostile mechanized or motorized elements to intervene, the formation of an advance guard generally broadens and consists of several reconnaissance elements advancing on a broad front supported by strong combat elements. (See fig. 4.)

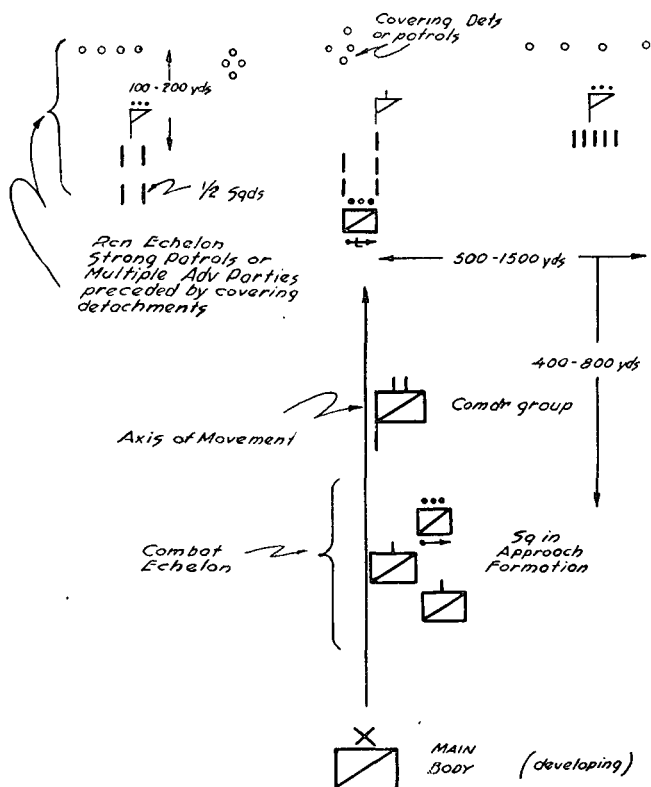


FIGURE 4.—Squadron as advance guard, contact imminent.

■ 119. DISTANCES.—The distances between the various elements of the advance guard depend on the following factors: terrain (flat or rolling, close or open), road net, weather, visibility, condition of the road, and the probable future actions of the advance guard and the main body. Distances should be such as to preserve for the unit next in rear freedom of action without interference from the enemy. Distances from the head of the reserve forward are usually flexible, as movements of the forward units are by bounds. As critical terrain features are approached, rear elements may close to better supporting distance of the leading elements. In this case, the distance from the reserve to the main body becomes considerably extended. It should never be allowed to become so great as to expose the advance guard to the possibility of defeat before assistance could reach it from the main body. At night or when visibility is limited, the distances between elements of an advance guard are reduced and control must be insured.

■ 120. REGULATING UNIT.—The advance guard is usually the regulating unit in large commands. Exceptionally, in small commands the advance guard regulates its rate of march on the main body. The order designating an advance guard prescribes the rate of march and indicates whether the advance guard or the main body is to regulate the rate of march.

■ 121. COMMUNICATION.—*a.* Communication between the elements of the advance guard and between the advance guard and the main body is maintained by the quickest and simplest means available.

b. Connection between the elements of the advance guard and between the advance guard and the main body is maintained by mounted men or by motorcycle messengers from elements in the rear.

c. Promptness in transmitting information is imperative.

d. Simple and well-understood signals are used to indicate enemy in sight, changes of rate of march, and for other purposes.

■ 122. ORDERS.—Orders to an advance guard include available information of the enemy, the plan of the commander of the whole force, insofar as it can be determined at the time, the route and rate of march, and special instructions

for the conduct of the advance guard if contact with the enemy is anticipated. If the command is to march in two or more columns, the orders to each advance guard may prescribe phase lines, carefully selected with regard to the road net and terrain on which positive periodic control is established. The march order prescribes the distance to be maintained between the advance guard and the main body. (See FM 101-5.)

■ 123. LEADERS.—The positions of commanders of various elements of an advance guard cannot be definitely stated. Each goes wherever his presence is most needed. In general, he is as far forward as is consistent with his task of command and control. Rapid personal reconnaissance, prompt decisions, and quick actions by the commanders of all elements are essential. The commander of the main body issues orders for the movement of his troops and prescribes the size of the advance guard to be employed. He frequently joins the advance guard commander.

■ 124. OPERATION.—Each element of an advance guard reaches terrain features in time to protect the forward movement of the element next in rear. In order to accomplish this, each advances by bounds. The distances between elements are flexible. All elements of the advance guard are alert to give timely warning of the approach of hostile aviation and mechanized forces.

a. The point acts as a patrol except that its advance is along a definite route. It is responsible for limited flank reconnaissance on either side of the route of march. It drives off hostile patrols weaker than itself. It never uncovers the axis of movement unless ordered to do so. If a hostile unit too large to defeat is encountered, the point informs the next element in rear, covers the axis of movement, and delays the enemy.

b. The advance party, which is the element next in rear of the point, has a flank responsibility extending to the effective range of its weapons, which may include light machine guns. It is prepared for hasty action, either offensive or defensive, depending on the relative strength of the enemy. It can operate slightly off the axis of movement, but not at such a great distance as to uncover this axis and allow a hostile attack on the head of the following unit,

c. The support, which is the element next in rear of the advance party, usually consists of the remainder of the force from which the advance party has been taken. Its primary missions are to reconnoiter, to secure the march of the reserve, and to support the advance party. Its flank responsibilities extend to effective machine-gun range. It is the first element that has sufficient strength to permit maneuver and is responsible for the principal flank reconnaissance of the advance guard. Ordinarily the advance party establishes itself as a pivot, and the support maneuvers against the hostile flanks. If necessary, the advance party is reinforced by machine guns from the support prior to the maneuver of the support. The action of the support is characterized by speed and boldness. The immediate defeat of smaller hostile forces is sought, thus forcing the enemy to disclose his strength and position. If larger forces are encountered, sufficient resistance is offered to permit the reserve to prepare for action.

d. The reserve, which is the rearmost element of the advance guard, is the maneuvering force and principal combat element of the advance guard. Unlike the smaller elements, it is not confined to the immediate vicinity of the axis of movement, but its maneuver must not extend beyond supporting distance of the main body. Should the advance guard be opposed by hostile forces too strong to be attacked, a defensive attitude is assumed on or near the axis of movement, thus permitting the main body to prepare for action.

■ 125. CONDUCT OF ADVANCE GUARD.—a. The principal elements of the advance guard are held well in hand for unified employment in the execution of missions of importance to the success of the main body and to avoid dissipating the advance guard strength by minor detachments. When an enemy not in force is encountered, the advance guard pushes him back or destroys him by prompt and vigorous action. If an enemy in force is encountered, the advance guard seizes terrain features to cover the axis of movement and assist the plan of the commander of the main body. Reconnaissance elements withdraw to the flanks to furnish flank protection and reconnoiter the hostile flanks and rear.

b. When the main body receives information that contact with a larger hostile force is imminent, it takes action to

speed up its development in accordance with the plan of action contemplated. Partial deployment of the advance guard is begun, and the front of the advance broadens in order to facilitate the reconnaissance of the hostile force. Guided generally by the instructions of the advance guard commander, the movement of the advance party and patrols is controlled by the support commander by the assignment of routes of advance and phase lines to be reached and general instructions as to the action desired. Connection between advance elements is maintained, but each pushes forward as directed even though adjacent elements are held up. Aggressive action on the part of the advance guard is for the purpose of forcing the enemy's advance elements to disclose their strength and disposition. By locating and operating against the hostile flanks, the advance party and support obtain much essential information. Usually the entire reserve is prepared to support the advance guard reconnaissance elements, or to drive through an exposed weak spot in the hostile dispositions, to determine what lies behind. This combat echelon operates under the orders of the advance guard commander. It must be able to support the flanks of the reconnaissance element, but it must not be dispersed to such a degree that it cannot be concentrated quickly for combat.

c. Prior to the commitment to action of the advance guard as a whole, the commander of the main body should inform the advance guard commander of his plan of action and what he expects the advance guard to do. If sufficient information concerning the enemy strength and dispositions is not available to enable the commander to make his decision, the advance guard is given the mission of gathering this information.

■ 126. MACHINE GUNS, ANTITANK GUNS, AND MORTARS.—a. The advance party is generally the smallest element to which machine guns are attached. One squad of light machine guns with this element is usually sufficient, unless it can be foreseen that the action will be defensive in nature. Machine guns should be well forward so as to allow for early entry into action. Heavy machine guns attached to an advance guard should be with the support or at the head of the reserve. The light machine guns organically a part of

the units composing the reserve may remain with their units or be grouped under the advance guard commander's control according to the contemplated employment of the advance guard.

b. Although attached antitank guns may be distributed in depth among the elements of an advance guard, including the advance party, a maximum of antitank weapons should be retained as mobile reserve by the advance guard commander pending determination of the direction of the mechanized threat.

c. Mortars are not ordinarily attached to cavalry advance guards. When attached, they are employed when hostile contact is gained to delay the enemy advance, to destroy hostile machine guns in position, to break up hostile reserves particularly when defiladed, and to provide smoke as required.

■ 127. CONDUCT AT HALTS.—a. When the main body halts for any reason, the advance guard, until relieved, is responsible for security in the direction of movement. The advance guard establishes a march outpost if the halt is to be short, or an outpost if the halt is to be of several hours' duration.

b. A march outpost is established as follows:

(1) The point establishes the advance observation on or near the axis of movement.

(2) The advance party establishes flank observation, reconnoiters a delaying or defensive position, and sites its machine guns to cover the axis of movement. It reconnoiters to terrain features within effective small-arms range of the axis of movement.

(3) The support is responsible for the principal flank reconnaissance. It establishes and reconnoiters the main battle position of the advance guard and sites its machine guns and its antimechanized weapons.

(4) The reserve is normally held together, prepared for either offensive or defensive action to the front or flanks.

(5) All elements of the advance guard are alert to give timely warning of the approach of hostile aviation and mechanized forces.

(6) If the halt is to be short, a few minutes only, the march outpost consists of the point in observation, flank reconnaissance from the support, and the siting of anti-mechanized weapons. The remainder of the advance guard is held in readiness.

(7) The advance guard, unless otherwise directed, is prepared to resume the march without loss of time.

(8) Figure 5 illustrates a march outpost established by the advance guard.

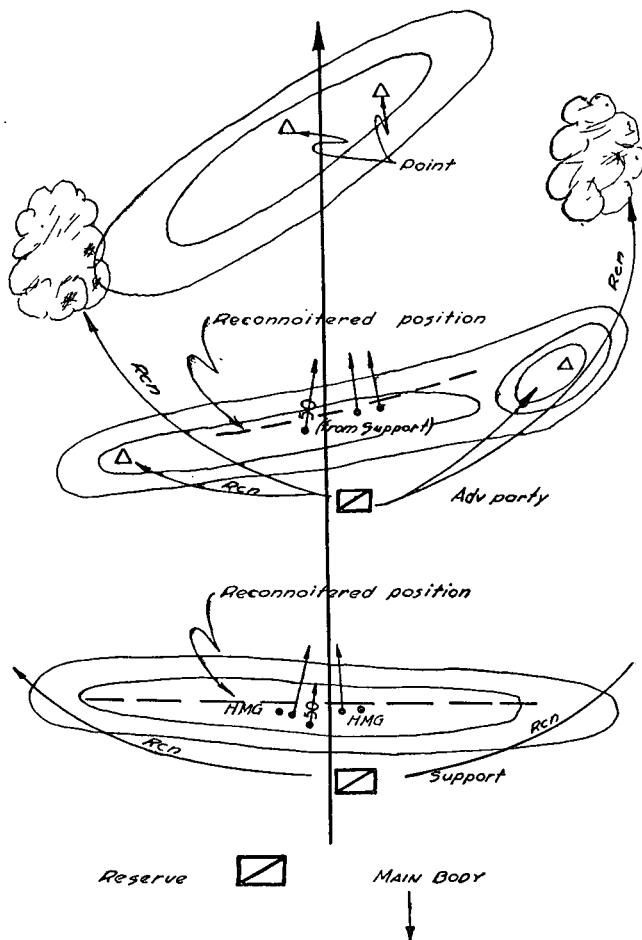


FIGURE 5.—March outpost.

SECTION III

COVERING DETACHMENTS

§ 128. GENERAL.—*a.* A covering detachment is a security detachment used to protect the movement of troops in the presence of the enemy. Normally it is a unit, such as a squad, a platoon, or a troop, acting under command of its own leader.

b. A covering detachment has some of the general functions of an advance guard. It precedes the unit from which it is drawn for the primary purpose of security and a secondary purpose of reconnaissance. The main purpose is to provide a group (or groups) to prevent surprise by fire, act as ground scouts, cut fences, and lead or guide the larger force so that it may advance under cover or by the best available ground.

c. A covering detachment is used when early contact with the enemy is expected and when, because of this expectation, the main body is deployed in an approach formation. The most apparent need for a covering detachment is during the approach to a line of departure from which an attack is to be launched.

d. Covering detachments are used for the same purpose and in a similar manner by horse and mechanized elements of Cavalry.

e. Horse elements of cavalry are well-suited for use as covering detachments.

f. Due to the close proximity of the enemy when covering detachments are employed and to the characteristic vulnerability of mechanized elements when freedom of movement is restricted, these elements of Cavalry are not well-suited for use as covering detachments. However, when mechanized cavalry units are acting alone, covering detachments composed of scout cars and motorcycles are used. Their conduct is the same as that of horse elements, taking into consideration the difference in means of transport.

g. Mechanized elements of Cavalry may be attached to a covering detachment. When attached, they are best used to conduct reconnaissance to discover hostile dispositions and

movements that could interfere with the advance of the detachment.

■ 129. **MISSIONS.**—The missions of covering detachments are—

a. To warn the main body of the presence of the enemy and of terrain unfavorable to its operation.

b. To provide security for the person of the force commander and party.

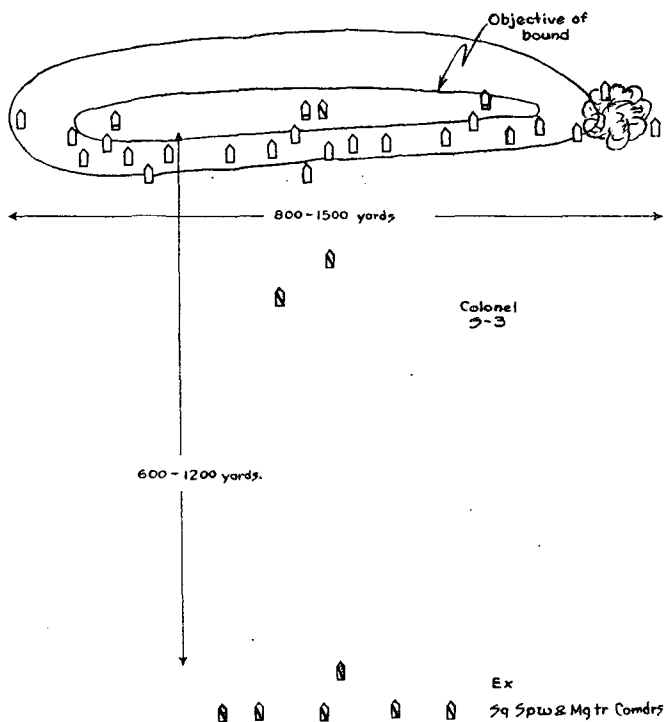
c. To locate obstacles.

d. To determine the best covered routes for the movement.

e. To cut fences.

f. To force enemy groups to disclose their strength and positions.

■ 130. **FORMATION.**—The formation of a covering detachment varies with the terrain but, in general, consists of a line of scouts or patrols. A rifle platoon sometimes covers a front of 1,000 yards or more. The frontage is limited by the fact that the detachment must be controlled by one man, its leader, who conducts it by means of commands, signals, and example. When dismounted, security may be provided by a line of scouts projected to the front by the respective squads, or by a covering detachment, dismounted. In the latter case, because of the consequent reduction in mobility and visibility, frontages are reduced and the distances between bounds are shorter than when mounted.



(In approach formation)

FIGURE 6.—Platoon as covering detachment for a horse regiment.

■ 131. OPERATION.—a. The commander of the main force controls the forward movement of the covering detachment. He assigns the limit of each bound and the route or zone thereto. At the completion of each bound he joins the covering detachment and receives such information as is

available, makes any desired personal reconnaissance, and issues instructions for the next bound.

b. The commander of the force being covered takes position well in advance of the main body. The party which accompanies the commander is kept to a bare minimum and moves in a dispersed formation so as not to present a good target or disclose the movement unnecessarily. Subordinate unit commanders may be with this party or may remain at the head of the main body as directed by the commander. A fundamental is to keep this group as small as possible, but to have at hand and readily available to the commander such key officers and men as are required to launch the command into action with maximum rapidity, simplicity, and coordination.

c. The main body is brought forward under the direction of the second-in-command in an approach formation at appropriate rates of march. Unnecessary halting is eliminated. The commander of the force, operating between the covering detachment and the main body, controls the movements of both.

d. A covering detachment is conducted by its leader from one assigned objective to another. It rarely precedes the larger force by distances greater than 1,200 yards. Squads and half-squads composing the detachment operate under the supervision of their leaders. When on the flanks they send part of their number to investigate ravines or woods or to look over hills and other terrain features which might conceal hostile forces capable of bringing fire on the main body. A covering detachment usually covers a front which overlaps the force being covered by 200 or 300 yards.

e. A covering detachment operates on a broad front with little or no depth. It should offer some resistance while retreating before a sudden onslaught of the enemy, and it may attack a small hostile patrol or delaying group to force it to disclose its strength. But its main function is to provide a group of scouts to prevent surprise by fire, protect the commander of the force, and lead or orient the larger force so that it may advance under cover or make the best use of the ground. The main body is protected by the warning it receives and by the fact that it is moving in an approach formation prepared for combat.

■ 132. MACHINE GUNS, ANTITANK GUNS, AND MORTARS.—The mission of a covering detachment and the necessity for the maximum mobility eliminate the need of machine guns, anti-tank guns, and mortars with it.

SECTION IV

FLANK GUARDS

■ 133. GENERAL.—*a.* A flank guard is a security detachment detailed to protect the flank of a marching force. The nature of this duty is such that it is usually performed best by troops possessing a high degree of mobility.

b. Horse elements of Cavalry are particularly well-suited to perform flank guard duty for forces composed of foot and horse troops.

c. Unsupported mechanized elements of Cavalry usually are not employed as flank guards, except when a mechanized cavalry unit is operating alone.

d. Horse cavalry units acting as a flank guard should have mechanized elements attached. They provide a reconnoitering element for the flank guard and a rapid means of communication with the main body. They carry antimechanized weapons and may be used for antimechanized defense or for transporting antimechanized weapons, ordinarily carried in pack, from one key position to another. They may be required to execute demolitions and to give warning of air attack.

e. The cavalry regiment, horse and mechanized, may be detailed as a flank guard for a large infantry command. Depending upon the situation, mechanized elements are employed for reconnaissance and distant delay, while horse elements operate defensively in closer proximity to the force guarded. If the main force is motorized, mechanized reconnaissance elements constitute the flank guard. Porté horse elements usually remain in the motor carriers until a threat is encountered which requires them to dismount.

f. Mechanized reconnaissance elements operating under the commander of the main force on flank reconnaissance missions beyond the flank guard provide security by giving timely warning of the location of hostile threats and by delaying hostile approach.

■ 134. MISSION.—The mission of a flank guard is to prevent the enemy ground forces from observing or bringing effective fire from the flank upon the main body during a march. The commander of the flank guard must know at all times the location of the main body and must have prompt and accurate information of the enemy. He must be informed as to the plans of the commander of the whole force in order to perform his mission properly.

■ 135. STRENGTH AND COMPOSITION.—The strength and composition of a flank guard are determined by the nature of the hostile threat, the size and composition of the main body, the terrain, and the probable future employment of the flank guard and the command as a whole. A flank guard varies in strength from a patrol to a force of all arms. No more troops are employed on this duty than are required by the situation.

■ 136. OPERATION.—A flank guard may be detailed at the beginning of the march of the main body and its mission specifically stated in general terms, or it may be detached from the main body during the march to cover a certain portion of the march and to rejoin the main body after the danger area has been passed. If the direction of march is changed or if an unexpected enemy threat develops, an advance guard already functioning may be converted into a flank guard and a new advance guard constituted. Often such a situation can be foreseen and the advance guard made strong enough originally so that at the proper time the flank guard can be sent out from it.

■ 137. DISTANCES.—The minimum distance at which a flank guard operates from the main body is fixed by its mission, that is, to prevent effective fire from being brought to bear on the main body. However, against superior hostile forces, delaying action is usually the best means available to Cavalry for the accomplishment of this mission, in which case the distance should be sufficient to accomplish the requisite delay, but not so great as to allow a mobile hostile force to interpose itself between the flank guard and the force it is protecting.

■ 138. METHODS OF EMPLOYMENT.—There are three general methods of employment of flank guards. These are—

a. Moving on a route generally parallel to that of the main body.

b. Occupying one key position.

c. Occupying several key positions, successively or simultaneously.

■ 139. MOVING ON PARALLEL ROUTE.—When a route generally parallel to and at a suitable distance from the main route of march exists, when key positions do not exist, and when continuous flank protection is required throughout the length of the column during the march, the flank guard marches parallel to the main body. It may move abreast of the advance guard or farther to the rear, depending on the avenues of hostile approach. When employed in this manner, it is frequently advisable for the flank guard to send detachments out in the direction of the enemy, particularly to cover dangerous avenues of approach. Reconnaissance must be pushed well out on the dangerous flank, and the flank guard or portions thereof must be prepared to move promptly to threatened points. The parallel route for a cavalry flank guard may often be all or partly across country. If the hostile threatening force contains cavalry, the avenues of hostile approach may likewise be across country.

■ 140. ONE KEY POSITION.—The road net or the terrain may be such that the enemy is limited to a definite avenue of approach. In this case, the flank guard may move directly to a single key position, the possession of which will afford the necessary protection to the main body. This key terrain feature may be defended until the mission is accomplished, or more often it may be the final defensive position of a delaying action which is initially developed farther out in the direction of the enemy.

■ 141. SEVERAL KEY POSITIONS.—a. If threats are feared from several avenues of approach, each of which the main body must pass successively, it is necessary to protect against these threats in one of two ways:

(1) The flank guard or elements thereof may occupy the several key positions successively; or

(2) Several flank guards may be detached in turn from the main body and held at the threatened points until the main body passes.

b. The first method is economical in troops. It may be used when the mission of the command requires it to reach its destination with a maximum of troops in hand or when the danger of attack is remote. The successful execution of this method requires that the flank guard be able to move faster than the main body and that the enemy cannot move faster and interpose itself between the main body and the flank guard.

c. If hostile avenues of approach are separated by considerable distances and the main body is moving very rapidly, which is often the case with cavalry or motorized troops, key positions must be occupied by separate flank guards. Each is detached from the main body as the situation requires and operates in the same manner as a single flank guard.

d. The determination of how long each position must be held, or how much delay must be imposed upon an attacking force, demands accurate calculation of time and space factors. If orders to the flank guard do not include instructions as to these details, their calculation becomes a responsibility of the flank guard commander.

■ 142. MACHINE GUNS, MORTARS, AND ANTITANK GUNS.—a. As the action of a flank guard is defensive, machine guns and mortars are usually attached. A unit detailed as a flank guard may sometimes be reinforced by heavy machine guns beyond the proportion in which they exist in the regiment.

b. If the hostile threat warrants, antitank weapons should be attached to the flank guard to provide protection both for the flank guard and the main body.

SECTION V

REAR GUARDS

■ 143. GENERAL.—a. A rear guard is a security detachment which follows and covers the main body on the march. In covering a retirement, it enables the main body to avoid combat and regains for the commander his freedom of action. (See FM 100-5.)

b. Cavalry is especially well-suited to perform rear guard duty because its mobility enables it to reconnoiter well to the flanks, to operate over a wide front, to vary its action, and to withdraw quickly after having delayed the pursuing enemy to the last possible moment.

c. When the pursuing force consists of Infantry or is very weak in Cavalry, the rear guard opposes the heads of enemy columns and operates boldly against the hostile flanks. The forces employed for attack against the hostile flanks should have sufficient strength to present the appearance of a strong attack; otherwise the enemy, by interposing a small containing detachment, may continue his pursuit without serious interruption.

d. When the pursuing force consists entirely of Cavalry, it is usually necessary for the rear guard to remain concentrated, employing the necessary reconnoitering patrols. Opposing Cavalry usually attempts to attack from the flank. Such attacks may be opposed by employing surprise fire combined with mounted counterattack or by fire alone. At times the enemy may be seriously delayed by ambush tactics and sudden mounted attack against the heads of his pursuing columns.

e. When the pursuing force consists entirely of mechanized and motorized troops, the rear guard must be kept concentrated in order that it may be able to repel attacks from the flanks and to avoid being cut off from the main body.

f. Fundamentally, the main efforts of a rear guard are directed to denying or delaying hostile approach by such means as the defensive fire of all available weapons, harassing attacks, ambushes, road blocks, demolitions, and the like.

g. The action of the horse and the mechanized elements of Cavalry in rear guard actions is the same as is prescribed for these elements in defense and delaying action.

■ 144. MISSIONS.—a. The primary mission of a rear guard is to protect the main body from hostile surprise, harassment, and attack.

b. Specifically the rear guard must—

(1) Protect the main body against surprise and furnish information by observing to the rear and reconnoitering to the flanks.

(2) Hold back small forces of the enemy and prevent their observing, firing upon, or delaying the main body.

(3) Check pursuit by an enemy in force until the main body has time to reorganize, prepare for action, march beyond the range of hostile fire, or occupy a position.

(4) Provide suitable passive measures of opposition, such as interposing obstacles and demolitions when the latter are authorized.

(5) Collect stragglers and lost animals and destroy abandoned property.

■ 145. **STRENGTH AND COMPOSITION.**—The strength of a rear guard should be such as to enable it to accomplish its mission without the intervention of the main body. It varies from a small fraction to about one-third of the whole command, depending upon the mission, direction of march, mobility of the main force, nature of the terrain, and the enemy situation. As rear guards may be called upon to offer stubborn resistance and cannot expect assistance from the main body, they may be relatively stronger than advance guards. Contingents of other available arms are added in accordance with the requirements of the situation. Antitank weapons, engineers, artillery, and chemical troops will at times greatly facilitate the execution of the rear guard task.

■ 146. **FORMATION.**—*a.* When in close contact with the enemy, cavalry rear guards operate on broad fronts and employ delaying action.

b. When the distance from the enemy permits, the rear guard assumes a formation in depth similar to that of an advance guard reversed. It is subdivided into rear point, rear party, support and, nearest the main body, the reserve. If the size of the rear guard makes it impracticable to have all of these elements, they are dispensed with in the reverse of the order named.

■ 147. **DISTANCES.**—*a.* In general, distances are governed by the size and mission of the rear guard, by the strength, composition, mobility, and proximity of the enemy, and by visibility and terrain.

b. The minimum distance between the support and the reserve is determined by the consideration that the support must delay the enemy until the reserve can prepare for action. The maximum distance is that which the reserve can take without exposing the support to the danger of being cut off. These distances may be greater in open country or during daylight than under the opposite conditions.

c. The minimum distance between the reserve and the main body is determined by the consideration that the rear

guard must protect, and not be driven back upon, the main body. The maximum distance is that which can separate the reserve and the main body without the risk of hostile elements in force interposing between the rear guard and the main body.

■ 148. OPERATION.—*a.* The formation and method of operation of a rear guard are adapted to the particular situation. Movement is by bounds, based on the progress of the main body and the time limit set by the higher commander for holding designated terrain lines.

b. When in contact with the enemy, the rear guard operates on a broad front and delays the enemy from successive positions, utilizing long-range fires of all weapons to the maximum. When the situation requires long delays, the rear guard fights in one position or in successive positions. When the enemy presses his pursuit closely, greater resistance is offered, and harassing attacks on the hostile flanks are conducted whenever opportunity offers.

c. The elements of the rear guard usually retire by bounds, but may move at a steady rate of march whenever fog, darkness, rapid march of the main body, or other conditions render movement by bounds impractical.

d. Each element reconnoiters or observes to its own rear and flanks and furnishes timely information of the enemy situation to the next higher commander. Each cooperates in the fulfillment of the mission of its next higher element. Each in falling back avoids masking the fire, disclosing the location, or otherwise hampering the action of the elements covering its withdrawal.

e. The rear point is a patrol from the rear party which follows the latter en route. It adheres closely to the route of retirement, observing constantly to the flanks and rear to detect hostile moves. It discourages pursuit by firing upon hostile patrols or by mounted action when favorable opportunities occur.

f. The rear party, a subdivision of the support, follows the support. It endeavors to delay closely pursuing small enemy forces by long-range fire. It performs reconnaissance to the flanks to a distance of about 300 yards. It covers the withdrawal of the rear point by engaging the enemy either by means of dismounted fire action or by short, mounted

attacks. When necessary it maneuvers at distances up to about 300 yards on either side of the route of retirement.

g. The support is the smallest element capable of offering serious resistance. It follows the reserve en route or the main body when no reserve is present. In the latter case it also performs the duties that normally devolve upon the reserve. It delays the enemy, usually by means of long-range fire of small detachments in successive positions. It covers the occupation of delaying positions by the reserve. It reconnoiters to the flanks up to a distance of about 1 mile. It covers the withdrawal of the rear party by defensive fire action, augmented, when occasion demands, by mounted or dismounted attacks.

h. The reserve, normally the strongest element of the rear guard, constitutes its chief delaying force. It performs the more distant flank reconnaissance. It is a duty of the reserve in particular to detect the presence of any hostile force attempting an encircling maneuver. It delays the enemy by all available fire power and, when occasion demands, by offensive action in cooperation with the support. In case the situation requires the rear guard to effect a long delay of the enemy force, the reserve, under protection of the support, prepares and occupies strong delaying positions.

■ 149. COMMUNICATION.—Connection and communication are maintained in rear guards in the same general manner as previously outlined for advance guards. (See sec. II.) Scout cars and motorcycles greatly facilitate communication between elements of the rear guard and with the main body.

■ 150. MACHINE GUNS, ANTITANK GUNS, AND MORTARS.—*a.* The assignment and distribution of machine guns and mortars in a rear guard are similar to those in an advance guard. The proportion of heavy machine guns with the rear guard may be greater than with the advance guard.

b. Light machine guns are normally attached to any element of a rear guard the size of a platoon or larger.

c. Heavy machine guns may be attached to any element of a rear guard the size of a troop or larger. They are disposed at a greater distance from the enemy than the light machine guns. In case the rear guard fights a delaying action, they are employed as explained for such action.

d. The number of antitank and caliber .50 machine guns attached to a rear guard depends on the seriousness of the threat from mechanized units. Antitank guns are employed in the same general manner as with advance guards. (See sec. II.)

e. Mortars, particularly heavy ones, are valuable supporting weapons for rear guards due to their ability to secure long-range delay and interdict avenues of hostile approach.

SECTION VI

OUTPOSTS

■ 151. GENERAL.—*a.* An outpost is a security detachment detailed to furnish protection for a resting command or a defensive position against surprise and observation by ground forces.

b. The presence of a highly mobile enemy emphasizes the necessity for all-around security. The possibility of air attack requires that all units employ an adequate warning system and that they seek protection by dispersion and by concealment, such as that afforded by natural overhead cover, atmospheric conditions of low degree of visibility, movements at night, and camouflage.

c. At a distance from the enemy, Cavalry provides its security principally by extensive reconnaissance with horse and mechanized elements and by using greater depth of disposition in the bivouac area. It sends out detachments to hold critical points on the routes of approach from the front, the flanks, and the rear. Security is attained primarily by reconnaissance and observation and by the prompt action of local supports.

d. When contact with enemy forces is probable, security measures provide a continuous cordon, the perimeter of the occupied area being divided into sectors and assigned to the units within them.

e. In close proximity to the enemy, Cavalry establishes outposts as prescribed in FM 100-5.

f. Horse elements of Cavalry are used to form the outpost. They operate and function on this duty, insofar as is practicable, the same as Infantry. The general rule that Cavalry should not be separated from its mounts applies also in out-

post situations, except that usually horses are not kept farther forward than the line of supports.

g. The zone of reconnaissance of an outpost is usually extended by reconnaissance vehicles which operate under the direction of the sector or higher commander.

(1) During daylight, scout cars may be employed to conduct reconnaissance well to the front and flanks of the outpost and to observe in advance of the horse elements. Individual cars or motorcycles may maintain liaison laterally and from front to rear between elements of the outpost or detached posts as the need exists. Cars may be given missions of observation at critical points on the probable route or routes of hostile approach, thus operating as detached posts. Such daylight observation is usually accomplished by dismounted members of the car crews, with the cars held nearby under cover, prepared to withdraw rapidly. Security for the cars is most important under these conditions. Communication with the outpost should be continuous.

(2) During darkness scout cars are usually withdrawn in rear of the outpost line of resistance. They may be held in readiness to move by previously reconnoitered routes to critical points to support the outpost line of resistance, or they may be located and guns sited to cover likely avenues of hostile approach. If the situation requires scout cars may remain in concealed positions at considerable distance outside the outpost to maintain contact with the enemy or to protect obstacles by fire.

(3) Scout cars that have been withdrawn should again be in position for observation by dawn. When necessary for them to move to their positions before daylight the movement is made with great caution, because they are most vulnerable in darkness and the noise of the motors gives warning of their approach.

(4) Scout cars may be sent at night to maintain observation of important points, such as bridges, defiles, and important crossroads. When on a mission of night observation, because of the small crews, provisions for local security should be made by attaching additional personnel to the scout cars. Cars are hidden and sentinels posted to avoid their capture.

(5) Precautions are taken to prevent firing on friendly scout cars returning through the outpost. Prearranged visual or sound signals, such as simple codes with flashlight or horn, may be used.

■ 152. MISSIONS.—The specific missions of an outpost are—

a. To protect the main body against observation by hostile ground forces.

b. To give timely warning of hostile ground or air approach.

c. To offer resistance to attacks by ground or air forces in order to gain the time required by the main body to make the necessary dispositions.

■ 153. STRENGTH AND COMPOSITION.—a. The strength and composition, as well as the disposition and conduct of the outpost, depend upon the nature of the terrain, especially the road net and natural obstacles; special missions assigned the outpost; tactical dispositions of the main body; proximity, strength, nature, composition, and activity of the enemy; size and composition of the whole command; front to be covered; the distance of the outpost line of resistance from the position of the main body; and length of time opposing forces are expected to be in contact or the time the main body is to remain in place.

b. The outpost is initially given sufficient strength to enable it to accomplish its mission, but is made no stronger than is consistent with reasonable security.

■ 154. POSITION.—The outpost position should be selected because of its facilities for observation and its suitability for defense, consistent with the location of the main body.

■ 155. OUTPOST LINE OF RESISTANCE.—The outpost line of resistance is a line encircling the bivouac areas beyond which the enemy must be held until the main body can prepare for action. The distance from the bivouac areas to the outpost line of resistance is based upon the size of the outpost force and of the main body; the character, strength, proximity, range of weapons, and attitude of the enemy; and upon the terrain, especially the road net. Often this line is the perimeter of the bivouac. Strength is concentrated at the most important points, the remainder being covered by small detachments, patrols, and fire.

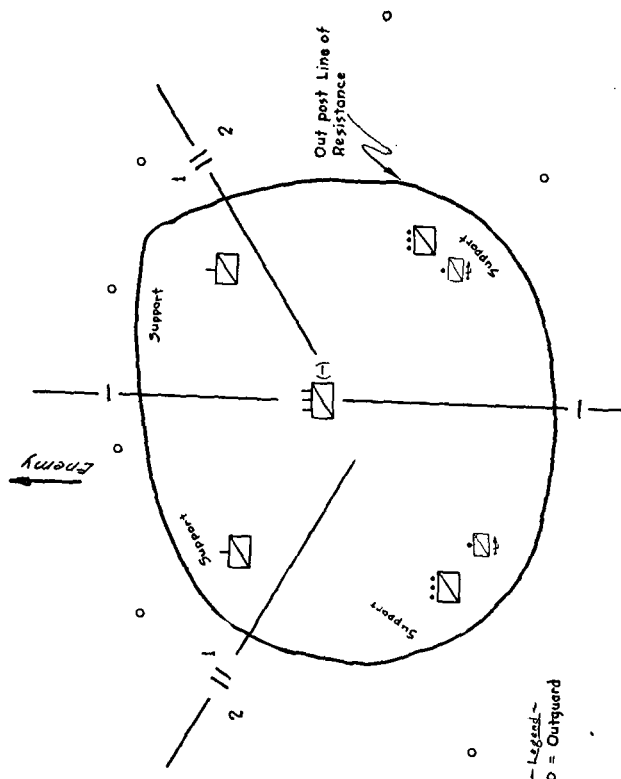


FIGURE 7.—Outpost for a horse regiment.

■ 156. ESTABLISHING OUTPOSTS.—*a.* Upon receipt of the halt order, the advance or rear guard commander immediately establishes a march outpost in order to furnish protection for the main body while it is going into bivouac and to cover the establishment of the outpost.

b. The order for the halt designates the bivouac areas of subordinate units, the outpost line of resistance, the positions to be held in case of attack, and sectors of the outpost to subordinate units.

c. These designated units furnish one or more supports which are located on or near the outpost line of resistance and constitute the principal echelon of resistance of the outpost.

d. The usual subdivisions of an outpost from rear to front are reserve, supports, outguards, and sentinels. In case of attack, the primary duty of each subdivision in front is to warn of hostile approach and to gain time for the element next in rear to prepare for action. If forced back, each forward element retires by prearranged routes on the next rearward element.

(1) *Reserve*.—All troops not designated for the defense of the outpost line of resistance constitute the commander's reserve.

(2) *Supports*.—(a) The supports are the principal agencies of security of the outpost. They constitute the defense areas on the line of resistance and are assigned defensive sectors thereon. They provide for their own security and the observation for the outpost by establishing outguards and sending out patrols. Each support varies in size from a platoon, with light machine guns attached, to a troop.

(b) The support commander in posting his unit seeks to cover his sector in such manner that the enemy cannot reach the assigned section of the line of resistance in dangerous numbers unobserved. On the other hand, he economizes in the number of men used on observation and patrol duty. He organizes the defense of his sector of the line of resistance as required by the situation. A unit detailed as a support is usually deployed on a frontage and in a depth corresponding to its deployment in defensive combat. Each defense area on the line of resistance is so organized as to command an adequate field of fire to the front and to sweep with fire the intervals between its position and those of adjacent supports. Each support is assigned a sector defined by means of readily distinguishable terrain features. Sector boundaries are so arranged and so designated that responsibility for covering roads, sensitive points, and likely avenues of hostile approach is never divided.

(c) As soon as the posting of the support is completed, the support commander inspects its dispositions, rectifies defects, and makes a report of his dispositions, preferably accompanied by a sketch, to his immediate superior. He indicates the spaces which are dead to the fire of organic weapons and especially require artillery or mortar support. He renders subsequent reports covering additional developments and embodying the information collected by his support. He main-

tains connection with adjacent supports and keeps them informed as to his situation.

(d) The support commander prescribes the degree of readiness for action of the support. The maximum degree of rest compatible with the situation is accorded to elements not engaged in observation or patrol duty. Except when especial vigilance is required, sufficient readiness for action can be assured for the support by posting, at the support, sentinels charged with giving the alarm in case of hostile activity. Greater vigilance is required in case of fog and toward dawn; it may then be necessary to cause the entire support to stand to arms and to draw in the outguards closer to the support. At night it is advisable to place the outguards in positions different from those which they occupy during the day. In such cases the ground is carefully studied before dark and the change made at dusk. When the outpost occupies a position for a considerable length of time in close proximity to the enemy, provision must be made for frequent change in the position of outguards in order to avoid their evasion or capture by hostile raiding parties.

(e) In each troop at least one officer and in each platoon one noncommissioned officer are constantly on watch. They are responsible to their respective commanders for the service of security of their unit. They make frequent inspections to assure themselves of the vigilance of sentinels and their proper instruction and ascertain whether they have any information to report.

(f) Supports are numbered consecutively from right to left in the outpost.

(3) *Outguards.*—Outguards occupy the line of observation forward of the outpost line of resistance, and each maintains one or more sentinels constantly in observation. They should not be located beyond supporting distance of the outpost line of resistance. Outguards are numbered consecutively from right to left in each support. The outguard commander must know what he is to do in case of emergency. Outguards established by the supports vary in strength from a half-squad to a platoon, each with light machine guns, depending on their location and mission. Normally, a half-squad or a squad is sufficient. An outguard located on an observation point which has suitable fields of fire often includes light machine guns. The horses of outguards may

(4) *Sentinels*.—Sentinels are posted either singly or in pairs. On sentinel posts from the larger outguards it is customary to use one sentinel in the daytime and two at night. Sentinels are located in concealed positions which afford an unobstructed view. They are given the following information:

(a) Direction and probable route of approach of the enemy.

(b) Names of features of military importance, such as roads, villages, or streams.

(c) Location of the support or other units of which the outguard is an outpost element and the location of adjacent outguards.

(d) Number of their relief and outguard, and designation of their support.

(e) What friendly patrols are in advance of the line of observation.

(f) Special signals.

(g) Means of identification of friendly ground or air elements.

(h) Where prisoners are to be sent.

(i) Where messages are to be sent.

(j) Action to take in case of hostile approach or attack.

e. Detached posts are observation and combat groups detailed for the purpose of occupying points which possess special importance to the security of the command, but which are too remote to be included in the normal outpost organization. Detached posts are given sufficient strength to maintain themselves and to furnish the necessary observations in their vicinity. They establish such outguards as may be necessary.

f. (1) Patrols are used for liaison between the elements of the outpost and for security and reconnaissance. Patrols sent out to a distance are usually sent from the reserve or from the main body. The commander of the main body specifically orders whatever special patrolling he desires and, in addition, support commanders provide for patrolling within their own respective sectors.

(2) Within the outpost, patrols visit the outguards, exchange information with them, and observe intervening ground. Such patrols usually consist of but two or three dismounted men, since the movements of large or mounted patrols are apt to betray the location of the outpost.

(3) A well-devised system of patrolling is important to insure the security of the outpost and the main body.

g. Figure 7 illustrates all-around security in an outpost of a horse regiment; figure 8, the organization of a rifle troop as a support on the outpost line of resistance.

■ 157. COMMUNICATION.—Communication within the outpost and between the outpost and the main body is maintained by means of radio or messengers. Visual signals such as ground projector signals, or audible signals such as improvised alarms, are utilized in accordance with a prearranged code to indicate the approach of hostile ground or air forces.

■ 158. ROAD BLOCKS.—Road blocks constructed from material such as fences, brush, trees, or other available material are placed on roads near the outguards, and tank traps may be constructed if time and labor permit. Antitank mines, if available, are utilized. Road blocks should be covered by the fire of automatic weapons.

■ 159. MACHINE GUNS, ANTITANK GUNS, AND MORTARS.—*a. Heavy machine guns.*—Heavy machine guns are ideal weapons for an outpost. Generally they are employed in proportion to the number of guns in the regiment. Heavy machine guns may be attached to a particular support or supports to insure covering all avenues of approach which it is considered will require heavy machine gun defense. If there are more such avenues of approach than there are machine guns, then some of the guns should be kept in reserve, positions and routes thereto reconnoitered, and the positions actually occupied only in case of an attack on that portion of the outpost.

b. Caliber .50 machine guns.—Caliber .50 machine guns may be attached to supports if danger from hostile mechanized attack exists.

c. Mortars.—Mortars are normally not attached to supports. Suitable mortar positions and routes thereto are selected and the mortars held in readiness for prompt movement thereto.

d. Antitank guns.—When 37-mm antitank guns are attached to the outpost, some may be placed in position between the main body and the direction of the most probable hostile mechanized threat. The remainder are held ready to move quickly to previously reconnoitered positions in order to intercept any such attacks.

SECTION VII

COUNTERRECONNAISSANCE

■ 160. GENERAL.—*a.* Counterreconnaissance by Cavalry includes all measures taken by it to screen a command from observation or investigation by hostile ground forces.

b. Cavalry units assigned a mission of counterreconnaissance seek to deny hostile ground reconnaissance of the unit screened by defeating or neutralizing the hostile ground reconnaissance elements.

c. In the execution of counterreconnaissance, Cavalry operates offensively, defensively, or by delaying action, resorting to all forms of combat when necessary.

d. The counterreconnaissance screen established by Cavalry may be either moving or stationary. A moving screen is applicable to situations where the movement of a force over a wide front must be screened; a stationary screen is used to screen the dispositions or concentration of troops or prevent the enemy from reconnoitering an area.

(1) Moving counterreconnaissance is most effectively executed by the defeat of the hostile reconnaissance forces.

(2) Stationary counterreconnaissance is most effective when the screen can be established behind an obstacle which must be crossed by hostile reconnaissance forces.

e. When a broad front must be covered, it is necessary to resort to delaying action as a means of temporarily impeding the operations of hostile reconnaissance forces.

f. All security detachments are charged with the mission of counterreconnaissance. They take the necessary measures to prevent hostile ground forces from observing the main body. They devote especial attention to observation points affording views into its dispositions.

g. When the hostile force consists of foot troops or is weak in cavalry and mechanized elements, or when it exposes itself to attack, the screening cavalry engages it in combat. This action should result in the defeat of the hostile cavalry or in its withdrawal from the field. The task of Cavalry on counterreconnaissance is simplified by the early defeat of the hostile cavalry.

h. When the hostile force is superior in strength, the screening cavalry usually resorts to defensive and delaying action.

i. Due to their characteristics the horse elements of Cavalry are best suited to perform counterreconnaissance missions under all conditions and over all types of terrain.

j. The mechanized elements and units of Cavalry on counterreconnaissance are best suited to operate against large hostile reconnaissance forces and against hostile mechanized units.

k. When detailed as units on counterreconnaissance missions, horse and mechanized cavalry units operate alike as far as their characteristics and mode of transport permit.

■ 161. MISSIONS.—*a.* Counterreconnaissance may be to screen a concentration, a movement, or any operation where secrecy is of importance.

b. The mission is accomplished by engaging the enemy in such a manner as to prevent or limit his observation or investigation of a certain area or beyond a certain line.

c. Counterreconnaissance missions may be assigned when the force to be screened is advancing, retiring, executing a flank movement, or is at the halt.

d. To prevent hostile patrols from working through the counterreconnaissance screen requires a network of small patrols over a wide front with larger units in rear conveniently located for promptly supporting these patrols. To prevent a hostile penetration in force, a reserve or possibly the main body of the counterreconnaissance force may be employed to drive back the enemy.

■ 162. TYPES OF COUNTERRECONNAISSANCE.—With reference to the nature of the screen established, counterreconnaissance is classified as moving and stationary.

a. Moving counterreconnaissance is applicable to situations in which the Cavalry is screening a force on the march.

(1) In a forward movement, the counterreconnaissance screen established by patrols operating on a broad front advances from one coordinating line to another. Counterreconnaissance detachments follow their patrols and keep within supporting distance of them. The detachments advance by bounds from one suitable terrain feature to another. When contact with the enemy is gained, the bounds become shorter and the halts more frequent according to the necessity for—

- (a) Defeating or driving off hostile detachments.
- (b) Maintaining the uniform advance of the screen.
- (c) Awaiting the arrival of needed supporting troops.

(2) In covering a retrograde movement, the screen either remains in place or retires by bounds as required by the situation.

(3) A counterreconnaissance screen may be used to cover the flank movement of a large body of troops.

b. Stationary counterreconnaissance is applicable when the Cavalry is screening a concentration or is preventing the enemy from reconnoitering an area.

■ 163. ZONES AND SECTORS.—a. When a commander assigns a counterreconnaissance mission to a body of Cavalry, he may designate a zone or sector to be covered by the counterreconnaissance screen.

b. If the mission calls for screening the advance of a force, a zone of action is usually prescribed for the Cavalry.

c. If the mission calls for the establishment of a stationary screen, the instructions usually designate the general line and sector to be screened.

■ 164. FRONTAGE AND DEPTH.—a. The frontage covered by Cavalry on counterreconnaissance depends upon size of the force, terrain, road net, visibility factors, and strength and activity of the enemy.

b. The following table, for use as a guide only, shows in miles the width of a zone that cavalry units can cover under favorable conditions:

Unit	Horse cavalry	Mechanized cavalry
	<i>Miles</i>	<i>Miles</i>
Platoon.....	2	4
Troop.....	4	8
Squadron.....	8	16
Regiment.....	12	20
Regiment (horse and mechanized).....	18	
Brigade.....	25	
Division.....		

c. A counterreconnaissance force is disposed in sufficient depth to give the commander time to concentrate an adequate force to prevent a hostile penetration of the screen.

■ 165. MAIN BODY OF CAVALRY.—*a.* The main body of the Cavalry marches or remains in a central location behind the counterreconnaissance detachments.

b. When advancing, the main body of the Cavalry usually moves along a central axis by bounds from one suitable defensive terrain feature to another.

c. When the main body of the Cavalry marches in more than one column, its advance is usually coordinated by the designation of specific lines to be reached by heads of columns at specified hours.

d. The commander of the main body of the Cavalry employs sufficient mechanized elements of Cavalry in both moving and stationary counterreconnaissance to perform necessary reconnaissance beyond the screen.

■ 166. DETACHMENTS.—In order to counteract the activities of hostile reconnaissance detachments and patrols, the screening cavalry employs counterreconnaissance detachments.

a. The duties of counterreconnaissance detachments are primarily to prevent reconnaissance by the enemy's ground troops and to prevent the transmission of information to the enemy.

b. The strength of a counterreconnaissance detachment depends on its mission, number of patrols it must furnish, strength and activity of the hostile forces likely to be encountered, road net, terrain, and nature of the screen to be established.

(1) Troops or squadrons are usually detailed as counterreconnaissance detachments. Under exceptional circumstances a regiment may be detailed for this purpose.

(2) The commander of the main body of the Cavalry usually employs sufficient mechanized elements in both moving and stationary counterreconnaissance to perform the necessary distant reconnaissance beyond the screen. Mechanized elements, when attached to horse counterreconnaissance detachments, normally are used as follows:

(*a*) *Moving screen.*

1. To maintain liaison within that part of the screen established by the detachment as well as with adjacent detachments.
2. To reconnoiter locally to the front and flanks of the detachment.

3. To assist the detachment commander in coordinating the progress of his patrols.

(b) *Stationary screen.*

1. To maintain liaison within the sector and with adjacent sectors.
2. To reconnoiter to the front and flanks of the sector held by the detachment.
3. As part of the mobile reserve to resist sudden attempts to penetrate the screen.

(3) Heavy machine guns and caliber .50 machine guns may be attached to counterreconnaissance detachments, generally in proportion to the number of these weapons in the regiment that the size of the detachment bears to the size of the regiment.

(a) In a moving screen the heavy machine guns are used in accordance with the procedure for their use in offensive action.

(b) In a stationary screen heavy machine guns are used to support the defense by fire.

c. In determining the number of counterreconnaissance detachments to be employed, the following factors are considered: mission of the main body of cavalry; extent of frontage to be screened; possible hostile reaction; nature of the terrain, including the road net; and whether the screen is moving or stationary.

d. Zones of action or sectors are habitually assigned to counterreconnaissance detachments. The width of the zone of action or the frontage assigned the detachment depends upon the strength and activity of the hostile forces likely to be encountered, the terrain, and the road net.

e. In general, counterreconnaissance detachments prevent small hostile patrols from penetrating the zone of action assigned, destroy or drive off small hostile detachments, delay the advance of larger detachments, form rallying points for their own patrols, furnish information to the commander of the main body, and communicate laterally with adjoining detachments.

■ 167. **PATROLS.**—Counterreconnaissance patrols are sent out from counterreconnaissance detachments.

a. In general, the principal duty of counterreconnaissance patrols is to locate and give timely warning of hostile ap-

proach in strength and to prevent hostile reconnaissance patrols from penetrating the screen. The cavalry commander employs his reconnaissance vehicles and, where necessary, reconnaissance patrols to supplement the information gained by counterreconnaissance patrols.

b. Depending upon its mission and the situation, the strength of a horse counterreconnaissance patrol varies from half a squad to a platoon with light machine guns attached. If enemy mechanized elements are expected, a caliber .50 machine gun may be attached. A mechanized counterreconnaissance patrol varies from a section to a platoon of combat cars, scout cars, or motorcycles.

c. In general, the conduct of patrols, whether in moving or in stationary screens, is similar.

(1) In a moving screen, patrols advance along routes which enable them to keep under observation the likely routes of hostile advance. They patrol laterally to adjacent patrols. The advance of patrols is coordinated by designating certain lines which must be reached at specified times during the movement.

(2) In stationary screens, patrols are posted at observation points from which they can view routes of hostile approach. Active patrolling between adjoining groups is maintained.

■ 168. MACHINE GUNS.—Heavy machine guns, caliber .50 machine guns, and mortars may be attached to horse counterreconnaissance detachments. In a moving screen, the heavy machine guns and mortars are used in accordance with the rules for their use in offensive action. In a stationary screen they are used to support the defense by fire.

SECTION VIII

COMBAT PATROLS, CONNECTING FILES, AND CONNECTING GROUPS

■ 169. GENERAL.—a. All elements of Cavalry are qualified to perform the duties of combat patrols, connecting files, and connecting groups. In using horse and mechanized elements of Cavalry or a combination of them for these duties, their characteristics, powers, and limitations must be considered in assigning missions.

b. Horse elements of Cavalry should be employed whenever sustained action is required for a comparatively long period, when the terrain to be covered is rough and difficult, and when distances are short and speed is not an important factor.

c. Mechanized elements should be employed when they are not needed for their primary mission of reconnaissance and when their characteristics of speed and ability to cover greater distances, make their employment advantageous.

■ 170. COMBAT PATROLS.—a. Combat patrols are security detachments detailed to protect troops engaged in combat.

b. Combat patrols have the following missions:

(1) To furnish timely information of the enemy movements toward or around the flanks.

(2) To drive off small enemy forces which threaten the flanks or rear and to contain or delay larger bodies until suitable preparations can be made to oppose them.

c. The strength and composition of a combat patrol depend upon the size and attitude of the force from which detailed, the nature and activity of the enemy, and the terrain.

■ 171. CONNECTING FILES.—A connecting file is an individual used to maintain contact between elements of a command. Connecting files are frequently employed in advance, flank, and rear guards and between these security groups and the body to which they pertain. In order to facilitate observation, they are normally employed in pairs and may be mounted or dismounted. In mechanized elements, mounted connecting files are drawn from motorcycle troops, reconnaissance sections, or rifle elements of the command. If dismounted, they are usually taken from rifle elements.

■ 172. CONNECTING GROUPS.—a. A connecting group is a detachment detailed by a force to maintain contact with a neighboring force.

b. The missions of connecting groups are to—

(1) Keep the commander of the force from which detailed informed of the locations and progress of neighboring units.

(2) Locate and report any intervening hostile force and oppose such force until arrival of reinforcements, or until the threat has ceased.

c. The strength of a connecting group depends upon the anticipated action required of it. When the sole mission is

one of information or liaison, it may be relatively weak; when the distance between adjacent forces is considerable and the danger of hostile penetration great, it may be relatively strong.

d. Mechanized reconnaissance elements may be employed as connecting groups, in which case they usually consist of a section or a platoon of scout cars or motorcycles.

SECTION IX

ANTIAIRCRAFT DEFENSE

■ 173. GENERAL.—a. A command obtains security against air reconnaissance and attack by employing measures for warning, concealment, dispersion, and fire.

b. Even under favorable conditions, Cavalry can rely upon only a small measure of protection afforded by friendly pursuit planes. Large cavalry units engaged in missions of attack, pursuit, exploitation of a break-through, defense, delaying actions, holding important terrain, or filling gaps in the line frequently require the protection of special anti-aircraft units. Small cavalry units, and Cavalry on the march or engaged on missions of reconnaissance, counter-reconnaissance, or security rarely operate under the protection of special anti-aircraft units or extensive camouflage. Consequently cavalry units must be prepared to secure themselves by their own means against air observation and attack under all conditions of campaign.

■ 174. WARNING.—a. Warning of the approach of hostile aircraft is obtained through friendly aviation and through both distant and close ground reconnaissance and security elements, both horse and mechanized. Air scouts are appointed within all units the size of a platoon or larger, and a warning system is organized. On the march, in order to provide timely warning of hostile airplanes, each unit, to include the platoon, has at least two properly trained air scouts on duty at all times. These scouts are relieved and replaced hourly. When air attack is probable, the scouts, as well as all other troopers, are instructed to look particularly for air attacks from the rear and from the direction of nearby mountains and forests. Air scouts should be equipped with whistles and sun glasses, since daylight attacks will often come "out of

the sun." Where the terrain permits, scouts should march at such distances from the head, rear, and flanks of the column that the noise made by troops will not prevent them from hearing warning signals or the motors of enemy planes.

b. When Cavalry is cooperating with air units, a system of prearranged signals to be given by friendly planes can be arranged. Cavalry has as part of its normal equipment many means of transmitting signals: whistles, bugles, auto horns, Very pistols, discharge of firearms, radio, telephone, voice, and signals (using the arm or the headdress). None of these organic means of signaling are satisfactory under all conditions of climate, weather, and cavalry action. Therefore Cavalry must depend upon a combination of the means available to provide a method of signaling that will insure timely warning of hostile air attack.

c. Methods of signaling hostile aircraft attack are as follows:

(1) Friendly airplanes give warning by prearranged and distinctive movements. All mechanized reconnaissance and security detachments broadcast the alarm by radio. A prearranged radio code is used, and all radios are given authority to break in on the radio net at any time to give this warning. Vehicles near the troops repeat the warning by giving three long blasts of the automobile horn repeated several times and pointing in the direction of the hostile plane.

(2) Each air scout and individual trooper who sees the hostile airplanes removes his headdress, extends it upward toward the planes, and using his whistle blows three long blasts, repeated several times, or he fires three equally spaced shots with his rifle or pistol in the direction of approaching aircraft. *All personnel are trained to repeat the warning instantly.*

■ 175. CONCEALMENT.—a. Enemy combat aviation operates by surprise, generally on information furnished by its own observation aircraft. Concealment and dispersion defeat hostile visual and photographic reconnaissance. Hence, concealment from observation and dispersion is the best defense against attack from the air.

b. Troops are detected by movement, regular formations, regular outlines, lights, reflection of light against bright metal, glass, empty saddles with shiny seats, guidons, faded and

off-color equipment such as tents and truck covers, gray and mixed-colored horses, dust, smoke, tracks, paths, and entrenchments. Shadows, darkness, woods, villages, haze, and mist aid in concealment.

c. When threatened by hostile air attack and the mission and situation permit, all cavalry troop movements are made under cover of darkness. When required to move in daylight and danger of air attack is probable, Cavalry uses irregular and dispersed formations and takes advantage of all available cover.

d. Troops in bivouac seek to avoid observation by camping in small irregular groups and by the use of shadows, overhead concealment, and camouflage.

e. At the halt, advantage is taken of dispersion, natural shadows, overhead cover, and broken terrain for concealment.

f. In combat, reserves, led horses, and vehicles are dispersed and concealed as in bivouac.

■ 176. **DISPERSION.**—*a.* A dispersed formation diminishes the vulnerability of a command to hostile air observation and attack. Dispersion is accomplished by platoon leaders on their own initiative.

b. Cavalry on the march in normal march formation is most vulnerable to air attack. For this reason, when hostile air attack is possible, formations with extended distances should be adopted, and the troops should be prepared to disperse on order or signal.

c. All cavalry organizations should have a prearranged system for dispersion in the event of a hostile air attack. Effective antiaircraft security is the result of standard procedure and intensive training within troops, squadrons, regiments, and brigades.

■ 177. **FIRE.**—*a.* Unless prohibited by orders of higher units, the organic weapons of Cavalry are employed against hostile aircraft on orders of troop commanders, or the commander of a smaller unit when acting alone.

b. On the march mounted—

(1) When conditions permit, horse elements of Cavalry disperse rapidly and dismount at least one-half of the riflemen of the command for employment against hostile air attack. Time rarely permits the employment of machine guns carried in packs. However, when the mission permits

the delay and time is available, these machine guns are also employed.

(2) Mechanized elements with appropriate weapons mounted on vehicles maintain them ready at all times for instant fire against hostile aircraft within range. Any mechanized vehicles in or near the horse columns of Cavalry employ their weapons to assist against hostile air attack.

(3) The trains, when time permits, employ their organic weapons against hostile air attack.

c. Dismounted, in position, in formation, or in bivouac all elements of Cavalry, when hostile air attack is probable, dispose weapons in position, ready to fire in case of attack. A carefully organized observation and warning system is an essential part of anti-aircraft security. (See sec. X.)

■ 178. COMBINATION OF DISPERSION AND FIRE.—The following method of dispersion and fire by Cavalry when under hostile air attack is one given for use as a guide only:

a. During daylight, all troops and trains disperse promptly to decrease vulnerability. When terrain, fences, or other local features prevent dispersion, troops must break into appropriate small groups, pass them through the defile at increased rates, and rely upon their fire for protection. Even when dispersion is practicable, undue extension of units must be avoided to prevent delay on the march.

b. In horse elements of Cavalry, when in column of twos, the even numbers turn over their horses to odd numbers, dismount, draw rifles at once, and prepare to fire. (When in column of fours, numbers 1 and 4 turn over their horses to numbers 2 and 3, respectively.) In order to prevent firing on friendly planes, firing is withheld until the command or signal to do so is given by the troop or other appropriate commander. Any mechanized elements in or near the column open fire promptly on this command or signal. When time permits, as many light and heavy caliber .30 machine guns of horse elements as practicable fire on hostile aircraft. Simultaneously with the dismounting of the indicated troopers, platoons disperse by having the individual troopers who remain mounted in charge of led horses scatter to the flanks. Advantage is taken of all cover and concealment. Those for whom no cover is available continue to increase the distances and intervals until the dispersion is complete. The

dismounted troopers and other weapons continue to fire while the dispersion is in progress.

c. When the situation permits, mechanized and motor columns march with extended distance (100 yards as a minimum) between vehicles so as to offer unprofitable targets. When attacked, vehicles continue to move. All automatic weapons mounted on the vehicles and all others that can be used from the vehicles fire on the attacking planes.

d. During darkness, upon the warning or actual approach of hostile planes, units which cannot gain nearby cover quickly halt and remain motionless to avoid being observed. If attacked at night, procedure similar to that prescribed for daylight is followed. Special precautions are taken against reconnaissance by hostile aviation using flares. When a unit is illuminated, it halts and remains motionless. Shaded lights only are permitted for use by troops and vehicles.

e. Practice without prior warning must be frequently given. This practice is essential in order to overcome the instinctive inertia and stickiness of troops in close formations. It can be accomplished best by frequently giving the air attack alarm unexpectedly during drill or while going to or returning from the drill grounds.

SECTION X

ANTIMECHANIZED DEFENSE

■ 179. GENERAL.—a. The commander of the whole force makes provision for the general all-around protection of the command and coordinates the local security measures of his subordinate units.

b. The principal protective measures employed by Cavalry against mechanized attack comprise a system of warning and the utilization of the terrain, barriers, and fire.

c. In horse elements of Cavalry, dispersion, darkness, weather, and climatic conditions are also utilized as additional protective measures against mechanized attack when suitable conditions exist and the mission permits.

d. Although cavalry units the size of the regiment and larger have organic antitank weapons for their normal protection, large cavalry units engaged on missions which may involve action against large armored units should be reinforced by additional antitank units.

e. When the defeat of the hostile mechanized force is not essential for the performance of its mission, horse elements of Cavalry, by dispersing and taking full advantage of their cross-country mobility and of terrain unsuited for mechanized vehicles, can avoid or neutralize the hostile mechanized threat.

f. In case of mass attack by mechanized vehicles, mounted horse cavalry units disperse and take full advantage of the terrain and of their antitank weapons for defense. Dismounted Cavalry, in the presence of hostile mechanized assault, must retain its position and employ its antitank weapons to the limit. Otherwise, they may be caught in the open and destroyed.

g. Small horse cavalry units in encounters with isolated vehicles or small groups of hostile mechanized forces promptly disperse and attack by fire. Some individuals or groups operate against the flanks, some against the front, and some against the rear in order to cut off the route of retreat of the vehicles and capture or destroy them.

h. Troops must be taught to utilize localities which combine the advantages both of obstacles and cover for protection against mechanized vehicles. Every soldier, especially those armed with antitank weapons, must be taught the possibility and use of his particular weapon against mechanized vehicles.

i. All troops will be instructed as to the vulnerable areas of known hostile mechanized vehicles. Turrets, ports, tracks, and suspension mechanism are the weak parts of most mechanized vehicles.

j. All troops must be trained to differentiate between the appearance of enemy and friendly combat vehicles.

k. Every soldier must be indoctrinated with confidence in the power and capacity of available weapons and means to combat hostile tanks.

■ 180. WARNING.—*a. General.*—(1) An efficient warning service is a primary consideration. All observation and reconnaissance agencies, ground and air, horse and mechanized, are coordinated to provide an information and warning service. They are required to make immediate report of a mechanized threat to the organizations to which they pertain and to higher and adjacent commanders. Duly warned, these commanders are enabled properly to orient and coordinate their defense.

(2) In order to provide timely warning, continuous efforts must be made to detect the presence of any hostile mechanized unit within striking distance and to determine its composition, strength, and, if advancing, its direction, and rate of advance. This information must be procured, transmitted, and disseminated in time to permit defensive measures to be taken before the hostile mechanized unit can close and attack.

(3) Observation aviation furnishes a means of securing information. An adequate complement of observation planes should serve every separate force.

(4) Aerial reconnaissance should be supplemented by ground reconnaissance conducted by fast vehicles equipped with radio.

(5) In friendly territory, commercial telephone and telegraph systems and radio broadcasting stations may be utilized to furnish information.

(6) Radio intercept and direction-finding instruments are valuable in detecting the advance of hostile mechanized units.

b. Signals.—(1) A system of signals or other means of transmitting the warning of the approach of a hostile mechanized threat or attack is essential. The same means of transmission of warning of hostile mechanized attack are available to Cavalry as are available to it for warning against hostile air attack. (See sec. IX.)

(2) Small cavalry forces may utilize mounted troopers and motorcyclists with a prearranged code of visual signals to give warning of the approach of hostile mechanized vehicles.

■ 181. **TERRAIN.**—*a.* In view of the sensitiveness of mechanized vehicles to terrain, full advantage should be taken of the terrain in preparing a defense against hostile mechanized units.

b. Terrain and the road net greatly influence the employment of mechanized forces.

c. While mechanized vehicles are restricted to terrain which permits their movement and is suitable for their employment, undue reliance must not be placed on terrain alone for antimechanized defense.

d. Should the ground be very rough, marshy, heavily wooded, thickly boulder-strewn, mountainous, or extensively cut up by deep water courses, irrigation canals, drainage

ditches, or bayous, mechanized formations are unable to move effectively. Any body of water more than 3½ feet in depth is an impassable obstacle to mechanized vehicles without recourse to bridging or ferrying.

e. A map study, supplemented by ground and air reconnaissance and aerial photographs, will disclose the lines of advance which favor, and those which impede, mechanized operations.

f. Proper utilization of the terrain against mechanized attack should combine the advantage of all natural barriers to the hostile advance, the strengthening of these barriers by demolitions, road blocks, mines, and persistent chemical contaminations, and the resultant canalization of the enemy advance into an area which can be defended by the fire of antitank and supporting weapons.

g. Some antitank weapons should be placed in concealed positions, at locations, in respect to the point of canalization, where they are at their most effective antitank range. Fire should be opened by surprise when hostile vehicles have reached that point.

■ 182. BARRIERS.—*a.* The following barriers have proven effective against mechanized vehicles:

(1) Concertina wire is effective against wheeled vehicles. It should be too tough for ordinary wire cutters to cut. Three or four coils spread across a road and anchored will stop most wheeled vehicles and entangle them so that much time is required to free the running gear.

(2) A ditch 4 feet deep and 8 feet wide will stop a light tank. A ditch 4 feet deep and 12 feet wide will stop a medium tank. Earth removed should be thrown up on the defender's side so that it cannot be used as a take-off if a vehicle attempts to jump the ditch. The side of the ditch toward the defender should be as nearly vertical as possible. A pile of logs 18 inches high on the enemy's side will slow his vehicles, expose the belly armor while crossing, and cause the machine to nose down against the steep bank.

(3) Piles made of railroad ties, 60- to 80-pound rails, or 8- to 10-inch posts, sunk 4 or 5 feet in the ground so as to leave 2 or 3 feet above ground, form an effective obstacle. They should be in three or four rows, the first row about 10 feet in front of the others to check the vehicle's progress and the

other rows about 4 feet apart with about 4 feet between piles. This main obstacle causes the vehicle to become bellied so that it loses traction and cannot move in either direction.

(4) Improvised obstacles, such as fallen trees, heavy timbers, large boulders, trucks, or other vehicles placed in defiles, around turns, and restricted points on the road, make effective barriers for stopping mechanized vehicles. It is most important that such obstacles be covered by fire, otherwise they can be easily removed by the personnel of the hostile vehicles.

b. Mines may be employed when available. To be effective they should be concealed in several rows with the mines about 6 feet apart in irregular pattern so as to provide about one and one-half mines to each yard of front. (See FM 5-30.)

■ 183. FIRE.—a. Caliber .50 machine guns are available in the regiment, in pack, in scout cars, and in the trains. Motorized 37-mm antitank guns and caliber .50 machine guns are available in the brigade and division and may be attached to subordinate units or employed for the protection of the command as a whole. Finally, the fire of the divisional artillery is used when the urgency of the situation warrants. In both offensive and defensive cavalry combat, provision should be made for the rapid concentration of as much artillery fire as possible on all areas favoring tank maneuver.

b. Armor-piercing caliber .30 ammunition with which cavalrymen are equipped for combat is effective against lightly armored vehicles at close range. Service ammunition interferes with the enemy's observation, but has little other effect.

c. Grenades, available to all elements of Cavalry, are effective weapons for use against mechanized and armored vehicles.

d. Through the operation of the warning service, the direction of the attack should be determined and guns placed in position ready to fire when hostile armored vehicles come within range. A mobile reserve of guns should be held in readiness, prepared to move to threatened points.

e. Roads should be interdicted at bridges and other defiles, and barriers should be covered by the fire of supporting troops placed for their surprise effect and in such a manner that they cannot be avoided.

f. Available tanks in the cavalry division are an especially effective antimechanized means against small groups of hostile vehicles. Their use should be in an offensive manner, coordinated with and supported by all other available anti-mechanized means.

g. Marching Cavalry employs its organic antitank weapons to protect itself from hostile mechanized attack as follows:

(1) *Horse elements.*—(a) Units the size of a regiment or smaller, when acting alone or as a part of a larger force, protect themselves by distributing their pack caliber .50 machine guns throughout the column.

(b) Units the size of a brigade or larger and units with antitank guns attached may use a small portion of the 37-mm guns to reinforce the antimechanized weapons of the smaller units, especially those at the head and tail of the columns. The bulk of the 37-mm guns should be retained in mobile reserve under brigade or division control.

(c) When, due to the terrain and road net, suitable avenues of approach for hostile mechanized attack are limited in number, the marching columns are protected by placing the 37-mm guns in positions of readiness to cover the possible avenues of approach. The antitank weapons are then employed in sections or platoons and perform their mission by leap-frogging from one position to another as the column passes.

(2) *Mechanized elements.*—Mechanized elements of Cavalry have antitank weapons in all mechanized vehicles and are therefore able to protect themselves against mechanized attack.

h. When a cavalry command is halted at rest or in combat, full advantage is taken of the terrain and the natural and artificial barriers. Caliber .50 machine guns are checker-boarded throughout the position, a few of the 37-mm guns are located to protect the most probable avenues of enemy mechanized approach, and the bulk of the guns are held in mobile reserve with gun positions prepared and routes thereto reconnoitered. The position as a whole should afford all-around protection, with width, depth, fields of fire, covered routes of approach, and protection against direct attack. The defense must be deep and flexible. Weapons are employed in numbers and each withholds its fire until the range

is effective. Close-in protection for antitank guns must be provided by other troops.

■ 184. DISTRIBUTION AND USE OF ANTITANK GUNS.—The following example, for use as a guide only, shows a distribution of antitank guns for the cavalry brigades and division under various situations:

a. Route march.—If suitable approaches for hostile mechanized units are numerous, the 37-mm gun platoons may be distributed as follows:

(1) *Division in one column.*—(a) *Leading combat team* (reinforced brigade).

One section with advance guard.

The remainder of organic brigade antitank weapons with the main body, under brigade control, located in the column so as best to meet expected hostile mechanized attack.

(b) *Rear combat team* (reinforced brigade).

One section at tail of brigade or with rear guard.

The remainder of organic brigade antitank weapons with the main body, under brigade control, located in the column so as best to meet expected hostile mechanized attack.

The division antitank troop is retained under control of the division commander.

(2) *Division in two or three columns.*—The guns may be placed in the center column, distributed in the reinforced brigade columns proportionately, or divided between the two flank columns, dependent upon the hostile mechanized threat. One section should accompany the rear guard, if one is formed.

(3) *Alternative.*—If suitable approaches for hostile mechanized units are limited in number, the brigade troops may remain under brigade control or be consolidated under division control. In the first case, the sections of each platoon leap-frog from one terrain feature to another, under control of the platoon leader, blocking the successive avenues of approach for hostile mechanized units until the brigade column has passed. In the second case, this operation is carried out under control of the senior platoon leader, successive avenues of approach being blocked until the division has passed.

b. Mounted approach march.—The 37-mm gun platoons remain located in the column or columns as in route march.

c. Dismounted approach march.—Each 37-mm gun platoon, assembled under its platoon leader and operating under brigade control, is held in readiness to meet mechanized attacks from any direction. Whenever the situation requires employment of both platoons on the same flank or in any other decisive locality, they are assembled under the troop or senior platoon leader and operate under division control.

d. Combat.—(1) When engaged in combat, in position, attacking, defending, or in delaying action, Cavalry, as far as time and the mission permit, takes full advantage of the terrain and natural barriers. By construction of artificial barriers to strengthen and extend the natural barriers, the hostile mechanized advance is canalized into areas or routes which are mined and covered by fire of antitank guns and other supporting weapons.

(2) The armored troop of the cavalry division may be used in emergency as a counterattacking force to repel mechanized attack.

e. Caliber .50 and caliber .30 weapons.—Regiments and smaller units of cavalry use the caliber .50 machine guns and caliber .30 weapons when appropriate for antimechanized protection, as far as is practicable, generally along the same line and procedure as the division and brigades use the 37-mm antitank guns.

CHAPTER 6

MOVEMENTS AND SHELTER

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SECTION I

MARCHES

■ 185. **GENERAL.**—*a.* A successful march is one that places troops at their destination at the proper time and in effective condition for combat.

b. Proficiency in marching is especially important to Cavalry since its characteristic mobility is largely dependent upon its ability to march.

c. In time of peace, marches are made to train and condition personnel and animals in march technique, to acquire tactical training, to concentrate troops, or to move from one location to another. In time of war, the mission of the march is given in orders from higher authority or is determined by the situation.

d. Many conditions, circumstances, and factors affect the rate and length of the cavalry march.

(1) Horse elements of Cavalry on good roads in daylight under favorable conditions, with well-seasoned men and animals, are able to march 35 miles per day at the rate of 6 to 6½ miles per hour for 6 days a week as long as the situation requires.

(2) Mechanized elements of Cavalry on good roads in daylight under favorable conditions, with well-seasoned men and vehicles in proper condition, are able to march 150 miles per day at the rate of 25 miles per hour for 6 days a week as long as the situation requires.

(3) When the mission and tactical situations demand, Cavalry can for short periods by forced marching materially increase its length of march.

e. A successful march requires careful planning, preparation, orders, and conduct. (See FM 100-5.)

■ 186. **PLANNING.**—*a. General.*—Knowing the purpose or mission of the march, the cavalry commander, in planning the march, considers the factors and conditions which have a direct effect on the marching ability and rate of march of his command. These factors and conditions are the tactical situation, the size and composition of the force, the length of columns, the condition and training of the men and animals; the age of animals, the condition of mechanized and motor vehicles, the weather, the terrain and the routes, water for animals, and the supply situation.

b. Tactical considerations.—(1) In planning a march in the presence of the enemy, the first consideration of the commander is his mission and the security of his command. The rate and length of the march and the comfort of the men and animals are of necessity of secondary importance. However, in order to maintain combat efficiency of the command, a well-planned march takes advantage of every opportunity to conserve men, animals, and vehicles and to reduce the inconveniences and hardships of the march.

(2) Readiness for combat at all times is the underlying rule governing the dispositions and formations of the command for the march.

(a) In small units, elements of the command are placed in the column or columns in order of expected employment.

(b) In large units, marching columns are constituted into combat teams in accordance with tactical missions. The various elements in each column are arranged so as to facilitate the expected employment of units and to meet the requirements of security.

(3) Dependent upon the size of the command and expected action or the enemy threat, Cavalry marches in one or more columns. One column facilitates control and deployment to a flank. Two or more columns facilitate deployment to the front. Echelonment of columns to a flank facilitates maneuver and deployment to that flank. Numerous small columns, or irregularly dispersed formations, favor concealment from aerial observation and reduce casualties from aerial attack and artillery fire.

(4) In deciding the number of columns to be used and their disposition for the march, the commander must consider that marching large commands in numerous columns facilitates the execution of the march, but increases the difficulty of tactical control, security against ground attack, and command. Columns must be kept within mutual supporting distance.

(a) When the unit is marching in several columns, the command of each column is delegated to a subordinate commander. These column commanders, accompanied by their staff and necessary communication troops, ordinarily march in the interval between the main body and the forward security forces of their column. They are responsible for the security of their columns. Commanders of flank columns are also responsible for the flank security of the whole command. Contact, liaison, or communication is maintained with adjacent columns.

(b) The commander of the whole force, accompanied by his staff and necessary communication agencies, may march in the interval between the advance guard and the main body of a column or by a different route. Control of columns is insured by contact, liaison, or communication with several columns of the command.

(5) When marching in proximity to the enemy, short halts are usually afforded sufficient protection by the march outpost formed by the security forces which are protecting the march. When making long halts, plans are made for special measures of security, with troops and vehicles disposed within the area so as to facilitate their movement out of the area for combat.

(6) In planning the march in the presence of the enemy, the commander must also take into consideration the influence of the terrain on the safety of his command. Special precautions and measures for safety must be planned for passage of defiles or streams which are of such extent that units are restricted in maneuver while executing the passage. When two or more columns must pass through the same defile, or cross the stream on the same bridge or at the same point, measures are taken to prevent congestion and concentration at the entrance or exit of the defile or crossing. Such defiles or crossings should, whenever possible, be passed during the hours of darkness. They should be thoroughly recon-

noitered and protected by security forces before columns enter the defile or attempt to cross. Antiaircraft defense of such defiles, bridges, or crossings is obtained by posting special anti-aircraft or organic weapons before the first element enters the defile, such weapons remaining in position until the passage is completed. Small motorized and mechanized elements ordinarily cross bridges or other short defiles by single vehicle.

c. Size and composition of force.—(1) The size and composition of the force have a direct influence on planning the disposition and organization of the command for the march.

(2) In time of peace or when contact with the enemy is remote, the principal objects of march dispositions are to facilitate the movement of troops and to insure to all the maximum comfort. Full use is made of the road net. March columns are composed of elements having the same march rate. As far as is practicable, columns are assigned independent routes over which to march. The columns are given routes favorable to their mode of travel. Unless the tactical situation demands a compact formation, the size of columns is kept small and the distances between units in a column are increased. This disposition and formation reduces hardships, affords small units advantage of favorable terrain for increased rates, and facilitates uniform progress of the command.

d. Length of columns.—(1) The lengths of marching columns exercise considerable influence on the length of a day's march. Under ordinary conditions, and if the road net permits, a column should be composed of not more than a reinforced regiment.

(2) Where it is necessary for a cavalry division to march in one column, it may be necessary to reduce the length of the day's march.

e. Condition and training.—(1) The physical condition and training of men and animals have a direct bearing on planning the rate and length of marches.

(2) *Horse elements.*—(a) With men and animals in good physical condition and well-trained, these elements can maintain march rates of 4 miles per hour for the walk and lead and 9 miles per hour for the trot for marches of normal length. Halt periods of 5 minutes per hour subsequent to the first hour are sufficient for the care of men and animals.

(b) With men or animals poorly trained, in poor physical condition or extremely fatigued, the rate of march at all gaits is necessarily reduced and the rest period increased in order to supervise properly the care of men and animals and to meet their state of physical endurance.

(3) *Mechanized elements.*—(a) With well-trained men in good physical condition and vehicles in good mechanical condition on good roads, these elements can maintain an average rate of march of 25 miles per hour for the period of the normal march. Halt periods of from 10 to 20 minutes every 2 hours are sufficient to rest the men and to maintain the vehicles.

(b) With men poorly trained, in poor physical condition, or vehicles improperly maintained, the rate of march must be reduced to prevent accident. Longer and more frequent halt periods must be given to rest the men and maintain and inspect the vehicles properly.

(c) The reduction of the rate of march and the lengthening of the halt periods reduce the length of march per hour. Poor physical condition of men or animals reduces the number of hours that they can march without a period for rest and recuperation. These conditions automatically reduce the daily length of march.

f. Age of animals.—(1) In planning the rate and length of march, the age of the animals must be considered. Horses too young or too old are unable to stand the rigors of long and continuous daily marching at a fast rate.

(2) Horses under 5 years of age are not sufficiently matured. They may become unsound and incapacitated due to break-downs of tendons and bony structure when unusual demands are made on them by extended active operations.

(3) Horses over 15 years of age are frequently approaching the age of senility, are hard to keep in working condition, frequently have developed permanent unsoundness, and become stiff and lame on the march. However, as with men, the useful age of horses varies greatly with the individual.

(4) Unsound and incapacitated animals reduce the rate and length of march, and their loss reduces the combat efficiency of the unit.

g. Condition of vehicles.—(1) The mechanical condition of mechanized and motorized vehicles directly affects their abil-

ity to maintain a sustained rate of march. Their condition must therefore be considered in planning the rate and length of march.

(2) Mechanized and motorized vehicles in poor mechanical condition and poorly maintained are forced to march at reduced rates and require longer and more frequent halts for inspection and repair. These conditions reduce the length of march and combat efficiency of the command.

h. Weather.—(1) The commander planning the march must also consider the climate and the weather, which have a direct influence on the marching ability of Cavalry.

(2) Horse elements of Cavalry are affected primarily by extremes of heat and cold. Rain, snow, and fog have little or no effect on the rate and length of march unless the footing is affected.

(a) Extreme heat causes excessive sweating of animals and attendant fatigue. This condition requires more frequent watering and longer walk and lead periods which reduce the rate and length of march. By marching at night or during the cool of the day, early morning, or late evening, much of the heat of the day's march can be avoided.

(b) Extreme cold affects the marching ability of horse cavalry primarily due to the suffering it causes men and animals. Longer and more frequent lead periods are required in order to prevent men from getting too cold. Animals while moving are not particularly affected by extreme cold. When halted, they chill quickly and unless great care is exercised, colds and pneumonia will develop. Suitable clothing for men and covers for animals are essential.

(c) Mechanized and motorized elements of Cavalry are not particularly affected by extreme heat and cold, provided proper precautions are taken to maintain the operating efficiency of the motors. Rain, snow, fog, and dust reduce visibility which in turn materially reduces the rate of march.

i. Terrain and routes.—(1) *General.*—The nature of the terrain and the character of routes affect the marching ability of Cavalry. When planning the march, the commander makes every effort to obtain complete information of the terrain and the character of all available routes. Routes most favorable to the march of each element of the command are assigned to them insofar as practicable. Flat or gently roll-

ing terrain with good roads is most favorable for marching all elements of Cavalry.

(2) *Cross country*.—(a) Horse elements of Cavalry can march cross country over favorable terrain without any material reduction in the rate of march, except in heavily wooded terrain.

(b) Mechanized and motorized elements of Cavalry, except over most favorable terrain, are forced to reduce their rate of march.

(c) Mountainous country, rugged, broken, or heavily wooded terrain and steep hills may materially reduce the rate of march of horse elements of Cavalry and are often impassable for mechanized and motorized elements.

(d) Lakes, ponds, and very soft or spongy marshlands and swamps are impassable obstacles for all elements of Cavalry and must be avoided. To avoid these obstacles frequently requires lengthening the cross-country march.

(e) Streams affect the marching ability of Cavalry by the time consumed in crossing. Bridged or easily forded streams require little or no reconnaissance or preparation for crossing and therefore interfere little if any with the rate of march. Unfordable streams require special preparation for crossing and may consume a considerable amount of the march time. Horse elements of Cavalry can cross unfordable streams by swimming and thereby save much time over other means of crossing.

(f) The difficulty of maintaining direction and following strange and unmarked routes may seriously delay a march cross country.

(3) *Routes*.—(a) The condition and type of road surface and the nature of the terrain over which the road passes have a direct effect on the marching ability of Cavalry.

(b) Hard level-surfaced roads with a rough finish, which affords good footing for animals and traction for vehicles, are most favorable for cavalry marching and permit it to maintain the maximum rate of march.

(c) Graded dirt or gravel roads with smooth surfaces free from loose rocks, wash-outs, and other minor obstacles are ideal for marching horse elements of Cavalry. Mechanized and motorized elements of Cavalry, using this type of road for prolonged periods, soon destroy the surface, which automatically reduces the rate of march.

(d) Unimproved roads and trails are normally worn and rough, full of loose rocks, chuck holes, and wash-outs. The rate of march of horse elements of Cavalry can be maintained on this type of road, but due to the rough surface the marching is more fatiguing on animals and more lameness occurs than on the more suitable type of road. The rate of march of mechanized and motorized elements of Cavalry is materially reduced over this type of road and, due to the rough surface, a great deal of mechanical damage to vehicles is likely to occur.

(e) Roads over mountainous terrain or hilly country, with long grades or numerous steep hills, reduce the rate of march of Cavalry. Horse elements are forced to increase walk and lead periods and reduce trot periods. Mechanized and motorized elements cannot maintain an even rate of march, and thus lose time.

(f) Deep mud and snow make heavy going for animals and for mechanized and motorized vehicles, cause extra exertion on the part of animals and drivers of vehicles, and materially reduced the rate of march.

(g) In selecting and assigning routes of march to the various elements of Cavalry, the commander should, as far as the mission and conditions permit, assign the best available roads and routes to the mechanized and motorized elements of Cavalry.

(h) A cavalry command will arrive quicker and in better condition after a long march on good roads than it will by taking a short cut over poor roads.

(i) When the situation permits, routes of march are reconnoitered and, if necessary, marked. Stream crossings are reconnoitered and, if considered unsafe for passage of the heaviest vehicles in the column, other available routes are selected, or necessary measures are taken to strengthen the crossings. Defiles are located, and terrain features from which their passage may be protected are selected.

j. Water for animals.—(1) While animals can go for prolonged periods without water, to do so seriously affects their efficiency and ability for sustained marching. In planning the march and selecting routes for horse elements of Cavalry, consideration must be given to watering facilities. On a march of normal length under favorable weather conditions, animals can go without water from the beginning to the end

of the march without undue discomfort. However, watering about the middle of the march is most refreshing and beneficial. In hot, dusty weather animals require more frequent watering. In cold or rainy weather less frequent watering is required. On long or forced marches, opportunities for watering every 2 or 3 hours add new life to the marching ability of animals and aid in maintaining them in good condition.

(2) The size of the watering facilities is most important from the standpoint of time consumed in watering and therefore lost on the march. Streams that will accommodate large units at one time, with low or gently sloping banks and hard bottoms, are ideal for watering animals and consume the least time in watering. Small and congested watering facilities cause long delays and, unless animals are in extreme need of water, should not be used. The time consumed in watering under such conditions had best be used to continue the march and thereby shorten the period of time the animals are under the saddle.

(3) Where it is necessary to utilize canvas or other type water troughs, proper dispersal of water containers to permit simultaneous watering of several groups will expedite the operation.

k. Supply.—(1) Continuous and uninterrupted supply increases the marching efficiency of Cavalry. The commander, therefore, endeavors to foresee supply difficulties and to make plans to avoid them.

(2) Horse elements of Cavalry when necessary can continue to march on short rations or can subsist on the country for long periods. However, the shortage of rations and supplies for prolonged periods seriously affects physical condition and reduces marching and combat ability.

(3) Mechanized and motorized elements of Cavalry must have supplies and parts for their vehicles. When vital supplies and parts are not available, vehicles will necessarily be immobilized.

■ 187. PREPARATION.—*a. General.*—March preparation insures that men, animals, and motor equipment are in the best possible condition; that all units are properly equipped and supplied; that traffic arrangements are perfected; that trains are loaded as prescribed; that measures are taken for

the replenishment of supplies; and that provision is made for the care and evacuation of the disabled.

b. March schedule.—(1) Based on the rate of march ordered, or the time for arrival at destination and distance to be covered thereto, commanders of horse cavalry columns prepare march schedules.

(2) The march starts at the time the head of the main body passes the initial point. To insure coordination, halts are scheduled by computations based on the starting time.

(3) March schedules are tables showing the number of minutes in each hour during which a command must trot, walk, lead, and halt in order to maintain the rate of march desired.

(4) For each column, the schedule reduces itself to a determination of the number of minutes the unit must trot each hour in order to maintain the rate of march determined upon. The length of hourly halts being known and the number of minutes of trot having been determined, the remainder of time in each hour is marched at the walk or lead.

(5) Horse elements of Cavalry march at the walk or lead at the rate of 4 miles an hour, or 0.06 $\frac{2}{3}$ (or 0.07 of a mile for practical purposes) in 1 minute. At the 9-mile trot, horse elements make 0.15 of a mile in a minute.

(6) Based on 55 minutes of marching time and 5 minutes' halt in each hour, subsequent to the first hour, the number of minutes of trot required in each period to maintain certain rates of march are as follows:

<i>Rate of march in m. p. h.</i>	<i>Minutes of trot</i>
4.5	10
5	16
5.5	22
6	28
6.5	34
7	40
7.5	46

(7) A satisfactory and easily remembered empirical formula for use in the preparation of march schedules is the Breden formula. To determine the amount of trot in any marching time at any prescribed rate of march or for a known distance: minutes of trot equal 12 times rate or distance less $\frac{4}{5}$ of marching time.

(a) *Example 1.*—It is desired to cover 5 miles during the first hour of a march, halting 15 minutes during the hour. Solution:

$$12 \times \text{rate} - \frac{4}{5} \times \text{marching period.}$$

$$12 \times 5 - 0.80 \times 45 = 24 \text{ minutes' trot.}$$

(b) *Example 2.*—It is desired to reach an initial point 3 miles distant in 35 minutes. Solution:

$$12 \times \text{distance} - \frac{4}{5} \times \text{marching period.}$$

$$12 \times 3 - 0.80 \times 35 = 8 \text{ minutes' trot.}$$

(c) *Example 3.*—The march distance to be covered is 24 miles in 4 hours of marching time. The halt for the first hour is to be 15 minutes and for each subsequent hour, 5 minutes. Solution:

Total time less halt time in minutes:

$$240 - 30 = 210 \text{ marching time.}$$

$$12 \times \text{distance} - \frac{4}{5} \times \text{march time.}$$

$$12 \times 24 - 0.80 \times 210 = 120 \text{ minutes' trot.}$$

$$210 \text{ marching time} - 120 \text{ minutes' trot} = 90 \text{ minutes' walk.}$$

$$120 \text{ trot to } 90 \text{ walk} = 7 \text{ minutes' trot to } 5\frac{1}{4} \text{ minutes' walk.}$$

(8) On level terrain, under ideal march conditions, it is possible to prepare a detailed march schedule in advance which will show the number of minutes to be covered at each gait in sequence. However, since such terrain and march conditions are rarely encountered, no effort should be made to prepare in advance the sequence and length of the periods to be used at each gait.

c. *Assembly.*—(1) Before leaving the camp or bivouac area for the assembly position for the march, unit commanders assisted by officers and noncommissioned officers should carefully inspect their units to see that men are properly equipped, that animals are properly bridled and saddled, and that all are in proper physical condition for the march. The condition of the shoes and feet of the animals is of primary importance. Mechanized and motorized vehicles are inspected to insure that they are properly serviced, equipped, and supplied, and in condition for the march.

(2) Commanders of security elements start their march from the bivouac area in time to permit all elements to gain, at normal gaits or rates, their prescribed positions by the

time the head of the main body is scheduled to pass the initial point. After this hour all elements maintain the prescribed rate of march.

(3) March unit commanders start their march from the bivouac area in time to arrive at the initial point at the time required to take their prescribed place in column.

(4) Loaded trains normally remain in the bivouac area until grouped and leave in accordance with special instructions issued for them.

(5) In forming for the march, a staff officer of the column commander, stationed at the initial point, observes and assists march units in forming the column.

■ 188. **ORDERS.**—*a.* The decision to march having been made, the commander issues a warning order at once. This order gives the time of the march and such pertinent information as will assist the troops in planning and preparing for the march.

b. The march order gives the details of the tactical situation, time of starting, march objective, rate of march, formations for the march, initial point, security measures, and all other details governing the march. It is issued as soon after the warning order as possible. Such orders are usually issued orally in small commands. In large commands they are usually written.

c. For forms and matters to be covered in the various orders see FM 101-5.

■ 189. **CONDUCT.**—The conduct of the march includes march control, formations, halts, gaits, care of men and animals, and march discipline.

a. Control.—(1) Control of the march of large commands in multiple columns is exercised through various means. Control measures adopted should interfere as little as possible with the conduct of columns by column commanders.

(2) Control points on the different routes of march may be designated and column commanders required to report their arrival at the designated points.

(3) Phase lines may be designated, beyond which columns do not march prior to stated times or until ordered to do so.

(4) Liaison officers may march with each column, reporting the progress of the march periodically.

(5) When close control of marching columns is necessary, staff officers in motor or scout cars may be used to contact column commanders with instructions.

(6) Column commanders march in the interval between the advance guard and the head of the main body and exercise all normal control from that point. The commander and staff officers should drop back along the column from time to time to observe the march, then regain the head of the column by easy stages or while the column is halted.

(7) Commanders of elements of the column ride where they can observe the march of their unit. They control the march of their units by orders, signals, and example. They are assisted in the control of the march by all officers and non-commissioned officers.

(8) Column commanders are responsible for maintaining contact with the rear element of the advance guard. Necessary connecting groups are sent forward from the main body.

(9) When the route of march is such as to require the posting of guides to prevent units taking the wrong route, sufficient men from the main body are attached to the advanced guard for that purpose. They march preferably at the tail of the last element of the advance guard. Men are posted preferably in pairs at points where the roads diverge from the prescribed route, where turns in the prescribed route occur, and at other points where elements of the main body might lose the route. Men so posted join the last element of the column as it passes.

b. Formations.—(1) *Horse elements.*—(a) Horse elements of Cavalry normally march in columns of twos with a column of troopers on each side of the road, leaving the center of the road free for vehicular traffic. If wide shoulders with good footing are available, the column marches on one side of the road. This permits commanders to march on the opposite shoulder to observe the march of their elements.

(b) When marching on roads with rough, narrow, or steeply sloping shoulders, or when the shoulders are interrupted by frequent drainage ditches or gutters, the column should march on the surfaced portion of the road.

(c) When marching on dusty roads, units should be authorized to take extended distances. With a cross wind, the column is consolidated on one side of the road.

(d) The squadron is the march unit. Squadron commanders control the rates and gaits in marching and the time and duration of halts of their squadrons so as to maintain the rate of march ordered.

(e) The platoon is the regulating unit for the march. When the situation permits, increased distances are taken between troops and platoons so as to provide the maximum comfort for men and animals. This distance is such as to permit platoons to change gait on the same ground as the preceding platoon and is about half the length of the platoon column. This distance is greatly increased at the trot, and units are closed to the prescribed distance at the walk.

(2) *Mechanized and motorized elements.*—(a) Mechanized and motorized elements of Cavalry march with vehicles in column, well to the right of the road.

(b) The commander or his designated representative controls and leads the march of mechanized cavalry. He establishes the rate of march to which all elements conform. It is the responsibility of each subordinate troop commander to conform to the leadership of the column commander, to maintain contact with the troop next in front, and to follow it at the prescribed distance.

(c) The troop is the march unit. Control is exercised by example, by staff officers, by motorcycle messenger, or by radio.

(d) Under average conditions, normal distances between troops are from 500 to 800 yards. This is sufficient distance to permit the troops to avoid the whip of the preceding organization. This distance may be reduced materially for very slow rates of march, particularly in congested areas.

(e) Distances between vehicles, except for security or reconnaissance elements, are from 25 to 50 yards under average marching conditions. This distance is increased for special type vehicles or when columns are moving at high speeds. When danger of air threat exists, distances between individual vehicles of march groups may be greatly extended. For slow speeds, distances may be decreased if danger of air attack is remote, the minimum being the distance necessary to prevent collision. (See FM 25-10.)

(3) The surgeon and the veterinary surgeon, with detachments, march at the tail of the unit to which attached.

Periodically they should go to the head of the unit, halt, and observe the condition of men and animals while the unit marches past.

c. Halts.—(1) Any march is in reality a series of short marches of from 45 to 55 minutes' duration for horse elements and 1½ to 2 hours for mechanized elements, with halt periods of from 5 to 15 minutes between.

(2) The halt periods are used to rest the horses and prepare the command for the next march period. They are intended to insure the maintenance of maximum marching condition of men, horses, vehicles, and equipment by providing opportunity for inspection of horses, inspection and adjustment of equipment, servicing and maintenance of motor vehicles, and for relief and rest of both horses and men.

(3) The first halt is made for the purpose of permitting the men and horses to relieve themselves. Horse elements check and insure proper adjustment of saddles and packs. Mechanized and motorized elements use this period to make any minor mechanical adjustments necessary to motors or vehicles. The first halt is usually of from 10 to 20 minutes' duration.

(4) After the first halt, horse elements of Cavalry halt from 5 to 10 minutes each hour. Mechanized and motorized elements halt from 10 to 15 minutes each 1½ to 2 hours.

(5) The fullest advantage can be taken of halt periods if the time, place, and duration of such periods are included in the march order.

(6) When unscheduled halts occur, information as to the probable duration of the halt and other pertinent instructions should be transmitted promptly to all elements of the column.

(7) As it is generally desirable to finish the day's march as soon as practicable, long halts are made only when special conditions require. The length of the march or the desirability of avoiding excessive midday heat may, however, render it advantageous for horse elements to make a halt varying in duration from 1 to 4 hours toward the middle of the day. During long halts, horse elements of Cavalry remove bridles and saddles, water the animals, and feed them grain. Mechanized elements inspect and service their vehicles. Men eat lunch. Except for the purposes of avoiding excessive heat

or to supplement the hay ration by grazing, long halts are not ordinarily made on marches of less than 25 miles.

(8) When the time for a halt arrives, the commander of each unit halts the leading element of his unit. Each element of the march unit in rear of the leading element closes up to its normal distance or halts in place, depending upon the orders issued.

(9) Upon halting, all elements clear the road. Necessary traffic control agents are promptly posted. Under campaign conditions appropriate observation and security groups are disposed. Troop commanders, platoon leaders, and squad leaders of horse elements, after first inspecting their own horses and equipment, inspect the horses in their units and require troopers to make the necessary adjustments of equipment and to examine their horses' feet. Men work in pairs in adjusting riding equipment and pack loads. In mechanized and motorized elements each driver at once proceeds to make the required inspection of his vehicle. These inspections are supervised by car commanders.

(10) At least 1 minute prior to the resumption of the march a warning is given to all elements. In horse elements, horses are straightened out in column, equipment given a final check, men mount at the command or example of commanders, and the march is resumed at the proper time. When there are pack animals in the unit, a preliminary warning of at least 2 minutes should be given to allow time to replace loads. In mechanized and motorized elements, motors are started, men take their places in vehicles, and the car commander signals his car is ready. On signal or example of the commander the march is resumed.

d. Gaits.—(1) The normal marching gaits for horse elements of Cavalry are the lead and walk at 4 miles per hour and the trot at 9 miles per hour. The gallop is used only under exceptional circumstances or when required by the tactical situation.

(2) The physical condition of the men and animals and the footing determine whether or not the regulation rate of march for the various gaits can be maintained. When men and animals are extremely fatigued or the going is particularly difficult, it is at times necessary to reduce the

rate of march to 3 or $3\frac{1}{2}$ miles per hour for the lead and walk, and to 7 or 8 miles per hour for the trot.

(3) At the start of the march, horses should be gradually warmed up by leading or walking before taking up the trot.

(4) All elements should lead the last half mile prior to the termination of a march.

(5) Trots should as far as possible be on level ground, but trotting down a gentle grade is preferable to trotting up steep or long grades.

(6) Trotting up or down steep hills and up long grades should be avoided.

(7) Trotting on paved roads is preferable to trotting on stony roads, through deep sand, mud, or snow, or roads full of chuckholes.

(8) Knowing the number of minutes of trotting to be used each hour in order to maintain the rate of march desired, the commander orders the trot, walk, lead, or halt in accordance with his desires, the character of the terrain he is traversing, and the condition of the road surface.

(9) Gaits may be regulated in march units through the use of a pace setter. When a pace setter is used, a noncommissioned officer on a well-gaited horse is selected for this purpose. He marches about 10 yards in front of the march unit commander. It is his duty to change gaits at the indication of the march unit commander and to maintain the proper pace.

(10) In each platoon there should be at least one noncommissioned officer trained as a pace setter. He should march in the leading element of the regulating unit. In the absence of the platoon commander he should have specific instructions to maintain the pace ordered.

(11) All regulating units change gait successively at the command or signal of their commanders. This change is made at the same point on the road as that of the preceding regulating unit. This action causes the distance between regulating units to be greatly increased at the trot; however, this distance is closed automatically when the gait is changed to the walk.

(12) To assist horse cavalry column commanders to maintain the rate of march desired, a timekeeper may be used. A noncommissioned officer may be used for this purpose. When

used he marches about 10 yards in front of the march unit commander, generally in company with or on the opposite side of the road from the pace setter.

(13) (a) It is the timekeeper's duty to maintain a current record of the amount of time the unit has marched at each gait since the last halt. He should be prepared at all times to tell the commander the number of minutes the unit has trotted since the last halt. At each halt he computes the distance covered during the preceding march period.

(b) The timekeeper, having been instructed as to the length of periods of walk, trot, and lead, informs the commander when it is time to change gaits.

(c) The following examples are included to illustrate the methods employed by the timekeeper in recording the conduct of a march and computing the distance traveled:

FIRST HOUR'S RECORD

Walk	Trot	Halt	1 minute walk equals 0.07 mile; 1 minute trot equals 0.15 mile
5	-----	-----	Lead. Cool, cloudy, flat country, excellent road.
10	-----	-----	
-----	5	-----	
3	-----	-----	
-----	5	-----	
3	-----	-----	
-----	5	-----	
3	-----	-----	
-----	7	-----	
4	-----	-----	
-----	-----	10	60.
28	22	10	
28	22	-----	
0.07	0.15	-----	
1.96	3.30	-----	5.26 miles, first hour.

A SUCCEEDING HOUR'S RECORD

Walk	Trot	Halt	1 minute walk equals 0.07 mile; 1 minute trot equals 0.15 mile
3	7		
3	7		
3	5		Rough and steep.
4	4		
1	7		Flat country.
3	5		
3			Lead.
		5	
20	35	5	60.
20	35		
0.07	0.15		
1.4	5.25		6.65 miles, second hour.

LAST HOUR'S RECORD

Walk	Trot	Halt	1 minute walk equals 0.07 mile; 1 minute trot equals 0.15 mile
5	6		Lead.
3	6		Warm and dusty.
3	5		
3	6		
3	5		
8			Lead to camp.
25	28		53.
25	28		
0.07	0.15		
1.75	4.20		5.95 miles, march completed.

e. Care of men and animals.—(1) In extremely hot weather, men must be prevented from consuming unwholesome or excessive food or beverages. Men and animals should be permitted to drink all the water desired prior to the start of the march and to drink sparingly during the march. It is desirable to water horses about an hour after starting the march and again a few miles before reaching a long halt. In hot, dry weather, horses should be watered every 2 or 3 hours during the march.

(2) When the weather is hot or the road dusty, horses may be freshened by wiping out the eyes and nostrils with a damp rag.

(3) Rubs and abrasions to men and animals can in most cases be avoided by the proper adjustment and fitting of clothing and equipment. Frequent inspections disclose these injuries when they are starting, and proper precautionary measures prevent their spreading or infection. Rubs are caused by friction, and the removal of the cause of the friction prevents further injury. This can usually be accomplished by the readjustments of the equipment so as to place the part causing the injury at a point where no harm will be done.

(4) Extremely tired horses can frequently continue on the march if relieved of their load. When spare horses are available in the column, loads should be shifted from tired to fresh horses when desirable. Every reasonable opportunity should be taken to transport both loads and saddle packs on available motor transportation.

(5) Alternating periods of trot and walk and the proper use of the lead are restful and refreshing to men and animals. The length of time that each gait is maintained also affects their physical condition. Trot periods of from 5 to 7 minutes in length and walk and lead periods of from 3 to 5 minutes are most restful and refreshing. Maintaining the gaits for materially shorter or longer periods, except when called for by the mission or necessary to cool out the animals preparatory to a long halt or watering, causes undue fatigue to men and animals. Individuals or small detachments at times are forced to use periods of greater length at the various gaits.

(6) (a) Frequent changes of gait freshen horses and men and increase the rate of march.

(b) Long walks are conducive to careless riding, sore backs, and undue fatigue of the horse and rider.

(c) The lead is used to freshen the riders and to relieve the riding animal of the weight of the rider. In the usual march, a short period of not to exceed 5 minutes each hour should be devoted to leading. Leading into or out of the hourly halt is the usual procedure. Leading is undesirable at other times during the march, because frequent mounting and dismounting result in disarrangement of equipment. It should be resorted to only when weather, steep grades, fatigue of men and horses, or other special conditions dictate. It must be remembered that leading does not relieve the pack horses, but rather increases the time during which the pack horse must carry his load. Therefore, unless pack loads are being transported by truck, excessive leading should be practiced with caution.

(7) For care of animals after the march, see FM 25-5.

f. March discipline.—(1) Based upon considerations affecting the marching ability of Cavalry, certain rules and regulations for the conduct of those participating in the march have been evolved. The observance of these rules and regulations is known as march discipline. In general, good march discipline consists of the observance of the following rules:

(a) Maintenance of prescribed gaits and rates throughout each unit.

(b) After crossing bad ground, maintenance of gait of crossing until rear of unit has cleared.

(c) Observance of traffic rules.

(d) Traffic control by designated individuals.

(e) Clearance of road by personnel, animals, and vehicles at halts.

(f) Prevention of straggling and falling out, except in cases of absolute necessity.

(g) Police of halting places, bivouacs, and camps.

(h) Repeating of signals, commands, and warning when required by the situation.

(2) In horse elements of Cavalry, good march discipline includes the following rules in addition to those mentioned in (1) above:

(a) Changing gaits simultaneously and smoothly within each march unit at command or signal.

(b) Giving sufficient warning to units before ordering a change of gait.

(c) Invariable practice of affording the horse every practicable physical comfort consistent with the mission.

(d) Dismounting when there is no necessity for remaining mounted.

(e) Observance of the proper methods of feeding and watering animals.

(f) Leading smoothly at prescribed distances, and troopers helping to keep the animals just ahead of them moving at the prescribed rate.

(g) Men fall out only because of sickness, injury to their horses, or to adjust equipment which obviously must be rearranged before the next halt.

(h) Men falling out of column do so in pairs. When ready to resume the march before the arrival of the tail of the column, they do so at the normal gaits. Trots are not extended beyond the 9-mile rate, and the gallop is not resorted to. The men gain distance by walking for shorter periods and by continuing to march during halt periods. While the column is trotting they join the nearest element.

(3) In mechanized and motorized elements of Cavalry, good march discipline includes the following rules, in addition to those mentioned in (1) above:

(a) Maintenance of prescribed distances between vehicles.

(b) Clearance of road by vehicle casualties.

(c) Vehicles which have lost position in the column rejoin by normal rates at the first opportune halt.

(d) Vehicle commanders or other designated individuals continuously observe for and transmit signals.

(e) Every vehicle is operated so as to facilitate the passage of messengers and staff and liaison personnel.

(4) Proper march discipline is insured by frequent inspections by the unit commander, assisted by his officers and noncommissioned officers, to see that these rules and regulations are being carried out. No leader can properly supervise his unit by always riding in front of it. All leaders down to the squad leader should frequently ride on the flank and in rear of their units. At the halts, troop commanders should give their commands a general inspection, especially checking up on their subordinate commanders to see that they are functioning properly. The inspection by the platoon leaders

and platoon sergeants should be more in detail. The squad leader, after first inspecting his own horse and equipment, inspects each horse of his squad and demands that each trooper properly prepare his horse and equipment for the next march period. An examination of the feet of each horse by its rider should be made at every halt.

■ 190. CROSSING STREAMS.—Streams may be crossed on ordinary highway bridges; on military bridges; by fording; by swimming; by ferrying; and on ice. Streams are defiles, and appropriate measures for protection of troops while engaged in negotiating such passages must be taken in accordance with the conditions presented by each situation.

a. Highway bridges.—Crossing highway bridges of considerable or extended length is executed in the same manner as passing a defile of the same extent.

b. Military bridges.—(1) In crossing military bridges the engineer officer in charge of the bridge is responsible for the security of the bridge and the regulation of traffic on the bridge and on its approaches. All instructions issued by the engineer officer and the engineer bridge guard relative to the use of the bridge are strictly obeyed.

(2) Every unit takes the prescribed formation for crossing not less than 100 yards before reaching the bridge and maintains this formation for at least 100 yards after the tail of the unit has cleared the bridge.

(3) The maximum load capacity of the bridge is made known to all column commanders, who are responsible that any vehicle exceeding this weight is detoured and crossed elsewhere. Heavy vehicles cross at increased distances.

c. Ponton bridges.—(1) In crossing on a ponton bridge, horse elements dismount and lead in column of twos, troopers marching on the outside of horses. Motor vehicles travel slowly, holding to the center of the bridge, and maintain the distance prescribed by the bridge guard.

(2) Having once entered on the bridge, troops do not halt thereon. The command to halt on the bridge may be given only in an emergency and then by the engineer officer in charge.

d. Fording.—When fording a stream at an unfamiliar ford, the crossing should be examined before committing units to the crossing. Easily fordable streams present little diffi-

culty. The sound sand footing of some safe fords begins to wash away after several animals in column or vehicles have passed, and the ford rapidly deepens. In such cases the crossing should be made on a wide front.

e. Swimming.—(1) Crossing streams by swimming is resorted to by Cavalry only when no other means within the required time is available. Crossing streams in this manner requires thorough preparations and safeguards.

(2) Deep streams should be crossed on a relatively wide front to prevent damming; streams with treacherous bottoms, on a narrow front with the limits of the ford marked.

(3) Animals should be allowed to drink upon entering the stream, but having been committed to the crossing they must be pushed ahead vigorously and not allowed to stop. If the current is swift, troopers remove their feet from the stirrups. Eyes must be fixed on the point of egress on the opposite bank and not on the surface of the water.

(4) Quicksand is dangerous and should be avoided.

(5) Prior reconnaissance of the river should be made to determine the most favorable crossing site. When necessary the banks must be prepared to facilitate going into and out of the water. If the current is swift, an additional landing should be prepared downstream for the benefit of any horses that might be swept past the regular landing.

(6) Pack animals should not be required to swim the stream with loaded packs.

(7) For necessary preparations, precautions, and methods of crossing streams by swimming, see FM 25-5.

f. Ferrying.—(1) In crossing streams by ferrying, troops are assembled under cover in the vicinity of embarkation points and organized into tactical groups corresponding to the capacity of the means for ferrying. From these assembly positions tactical groups are conducted by guides to their embarkation points. Instructions for embarking, disembarking, and conduct during the crossing are given at the assembly position.

(2) When animals are to cross by ferry, they are led onto the boat as directed, the most tractable animals in the lead. Where there is room for a single row only, they stand head and tail. If no suitable fastening is provided, each horse is held by one man. If there is room for two rows, all horses face inward.

(3) Men enter the ferry and move to the places assigned them so as not to interfere with the handling of the boat. They stand or sit as directed.

(4) If troops are being ferried in pontons and small boats, animals cross the stream by swimming. All equipment, except the halter, is removed and crossed on the ferry, and animals are held alongside or from the stern of the vessel.

(5) Vehicles are blocked and further secured by locking brakes.

(6) When rafts are used, the center is occupied first, and the load then uniformly distributed. Unloading takes place in reverse order, the center of the load being unloaded last.

(7) In unloading, points of debarkation are promptly cleared.

g. Crossing on ice.—(1) Ice, if thick and sound, is a very good bridge in itself. If thin it is a serious obstacle to crossing. The crossing should be carefully examined to determine the thickness and quality. The crossing track should be marked. Time permitting, the crossing should be sanded.

(2) Sound ice will sustain loads as follows:

<i>Thickness (inches)</i>	<i>Loads</i>
4	Foot troops in small groups.
6	Animals in small groups.
6	Light artillery.
9-12	Heaviest loads.

■ 191. **FORCED, NIGHT, AND CROSS-COUNTRY MARCHES.**—Forced marches, night marches, and cross-country marches are made under conditions which introduce factors in addition to those discussed for ordinary daylight marches. These additional factors must be considered in the planning, preparation, and conduct of these types of marches.

a. Forced marches.—(1) A forced march is one in which a command, during a given period, covers a distance considerably greater than is normal for the unit concerned. Forced marches seriously impair the fighting power of even the best troops. They are undertaken only in cases of urgent necessity. The completion of the march must find the troops in condition to accomplish the object of the movement.

(2) The conduct of a forced march is governed by the condition of the men, animals, and vehicles; the weather; the distance to be covered; and the time in which the march is

to be accomplished. For short forced marches where time is important, the rate of march may be increased, especially in small commands. Ordinarily, long forced marches are broken into shorter stages by halts of several hours, normal rates of march being maintained when in movement. They become practically a succession of normal marches of greater than average length and with shorter intervals of rest.

(3) When the situation demands, seasoned horse elements can march 125 miles in 48 hours, troops and horses arriving at destination in condition for combat or further effort. It is desirable, however, that the daily forced march not exceed 50 miles.

(4) Whenever the situation permits, troops should be informed why the march is necessary.

b. Night marches.—(1) Cavalry marches at night to gain surprise, to avoid hostile air observation or attack, to lessen the danger from hostile mechanized threats, to gain time, to avoid the excessive heat of the day, or for training.

(2) Visibility and condition of routes determine the possible rate of march at night. On moonlight or bright starlight nights, Cavalry can maintain approximately the same rate of march possible during daylight. On dark nights, the rate of march of horse elements of Cavalry is reduced dependent upon the condition of roads and footing. The rate of march of motorized and mechanized elements traveling without lights is materially reduced. With lights, the rate of march is not greatly affected.

(3) Special precautions are taken to maintain direction.

(4) Special precautions are taken to protect the command against hostile aviation. Shaded lights only are permitted. Smoking is prohibited. When aircraft approach, marching elements halt and remain motionless unless attacked.

(5) When near the enemy necessary measures are taken to maintain secrecy.

(6) When practicable, preparations for a night march are made during daylight. If secrecy is desired, no obvious preparations are made during daylight, and time must be allowed to permit all elements to reach concealment in the new bivouac prior to daylight.

(7) The situation and instructions from higher authority permitting, full use should be made of radio to control the march of a large unit moving in multiple columns.

(8) Movement of trains may be made in convoys with or without lights. When lights are used, vehicles moving singly at irregular distances and normal speeds are more likely to escape discovery by hostile observation than when in convoy. Without lights a large white marker, luminous disk or specially shaded light may be placed on the rear of each vehicle in order that successive vehicles can maintain contact and avoid accidents. Drivers and substitute drivers alternate frequently.

c. Cross-country marches.—(1) Marches cross country may become necessary because of the tactical situation or because of lack of available roads.

(2) When in close proximity to the enemy, cross-country formations and dispositions approximate those of approach marches.

(3) Formations and dispositions are generally more dispersed than when marching on roads.

(4) Routes of march must be carefully selected with a view to their practicability, location of cover, absence of impassable obstacles, and march objectives.

(5) Over average terrain, horse elements can march cross country at 5 miles an hour.

(6) Mechanized and motorized elements are able to execute cross-country marches at reduced speeds dependent on the type of terrain and traction.

SECTION II

MOVEMENTS BY MOTOR TRANSPORT

■ 192. GENERAL.—*a.* Due to the fatiguing and debilitating effect that frequent or long forced marches have on men and animals and the reduced combat efficiency resulting therefrom, every effort should be made to spare horse elements of Cavalry from such marches by use of motor or rail transportation.

b. Large forces of horse elements of Cavalry can be more easily and expeditiously moved by rail than by motor transport. However, when railroad facilities are not suitable or available and the tactical or strategical situation demands, large cavalry forces can be moved by motor transport. Cavalry units the size of a regiment or reinforced squadron can readily and easily be moved by motor transport.

c. The horse elements of cavalry regiments, horse and mechanized, are habitually moved by motor transport.

d. The cavalry division (horse) has sufficient organic motor transportation of a combination animal and cargo type in the quartermaster squadron to transport a reinforced squadron (horse).

e. The cavalry regiment (horse) has organically a transportation platoon comprising 2½-ton cargo trucks, which with slight modification and added equipment may be used to transport a reinforced rifle platoon. However, these trucks are used as combat trains and other routine duty in the regiment and are seldom used for the purpose of transporting animals.

f. The following War Department publications contain information relative to movement by motor transport and are applicable to Cavalry.

(1) FM 25-10 prescribes in detail the essentials necessary for the successful organization, operation, and conduct of motor transport marches.

(2) FM 25-5 discusses types of motor vehicles available for the transport of cavalry animals, the necessary modification of these vehicles, additional equipment needed to make them suitable for horse transport, methods of loading animals, and care of animals during motor transport.

(3) FM 100-5 discusses the tactical considerations and security of the march.

(4) FM 101-10 contains the information relative to movement by motor transport.

g. This section presents only such additional information relative to movement of Cavalry by motor transport as is not covered in the above War Department publications.

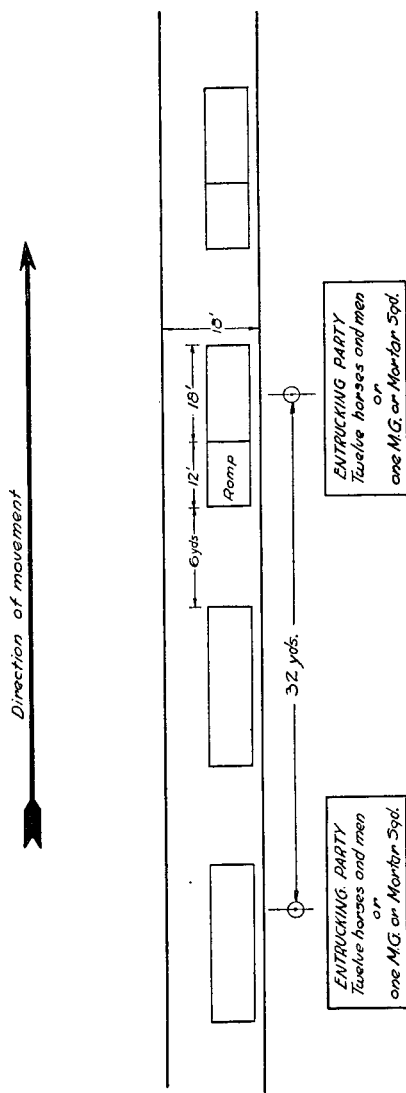


FIGURE 9.—Method of parking trucks.

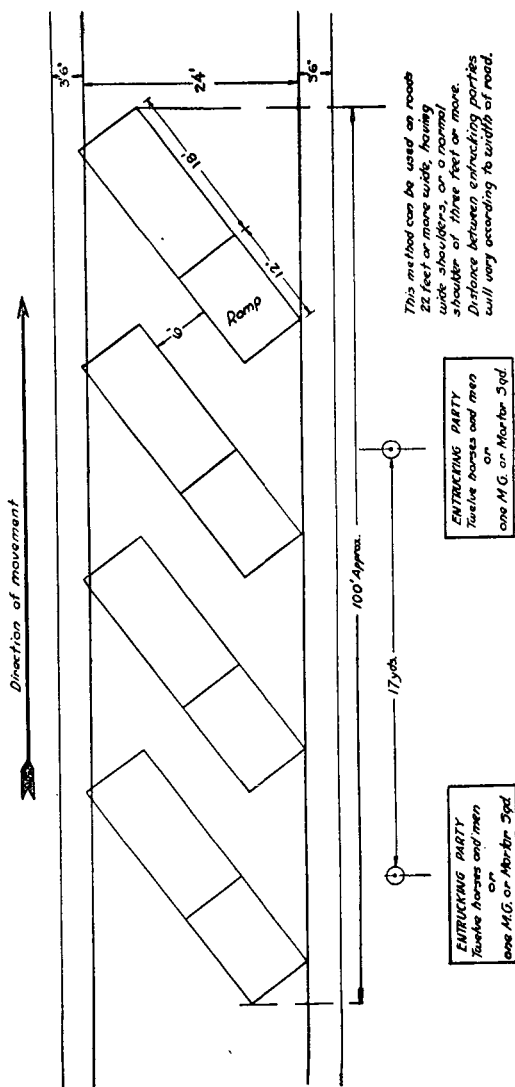


FIGURE 10.—Trucks parked diagonally.

■ 193. TRUCK REQUIREMENTS.—*a.* Truck requirements for horse elements of Cavalry can be estimated by dividing the number of animals in the unit to be transported by the animal capacity of the trucks to be used, and adding 5 percent to provide additional space for pack equipment.

b. (1) Trucks, 2½-ton, cargo, stock-rack body, will transport 4 horses, 4 men, and their equipment.

(2) Semitrailers, 4-ton, combination animal and cargo, will transport 8 horses, 8 men, and their equipment.

■ 194. ORGANIZATION.—*a.* In the grouping of tactical units making a movement by motor transport, essentially the same conditions govern as for marches made by normal methods.

b. In movements made in the combat area, tactical considerations govern. Entrucking groups consist of combat teams. March units consist of tactical units.

c. In assigning trucks to entrucking groups, unity of organization is preserved as far as practicable, trucks being assigned by platoons.

d. Two command echelons are organized for the march. The commander's group consists of the commander, part of his staff and headquarters personnel, and a representative from each squadron or similar unit. This group is free to move wherever the commander wishes. Usually it is in advance of the head of the column. The forward echelon, less the commander's group, consists of the executive officer, remainder of the headquarters staff not elsewhere employed, and a representative from each subordinate unit. This echelon rides in control cars at the head of the column, directing speeds and routes to be followed.

e. Entrucking groups, march units, and other subordinate echelons are commanded by the appropriate subordinate commanders of the tactical unit. Subordinate motor transport officers in charge of truck elements assist unit commanders as staff officers during the movement.

f. Depending on the method of halting or parking trucks for loading, entrucking parties are placed at points approximately 32 yards apart for trucks halting in column, or 17 yards where trucks can be parked diagonally on a 24-foot highway with wide, level shoulders, or normal shoulders of 3 or more feet on each side. (See figs. 9 and 10.) Whenever possible, it is preferable to use the diagonal method of

parking for entrucking and detrucking because of the lesser road space required. Reduced dispersion of entrucking parties facilitates supervision by organization commanders. When this method is used, all other traffic at the entrucking point must be stopped.

g. When moving as combat teams, vehicles of the unit train, carrying combat supplies, accompany the units. Such vehicles may be included within march units, or march at the tail of the last march unit of their combat team as a separate march unit. When the movement is being made by organization, the unit trains are grouped and march as the last march unit of the column.

■ 195. PREPARATION.—*a.* Troop units prepare for the movement well in advance of the time for entrucking. Horses are watered and fed. Men are fed just prior to departure and provided with a cooked meal. Horses are not fed during the march, but a feed of grain is carried on the saddles for use upon arrival. In hot weather or on extended marches, horses may be watered from buckets.

b. Prior to the time for entrucking, each troop is divided into groups. If motor transport units are provided with ramps at the rate of one for each two trucks, each group consists of the load for two trucks, including men, horses, and equipment. Thus all groups in the troop are permitted to entruck simultaneously.

c. When moving as combat teams, the combat team commander issues orders to reinforcing elements as to their places in the column, trucks assigned, time such elements join, and any other pertinent instructions.

d. As the time for entrucking approaches, troops break camp in the normal manner. Unit transportation is loaded. If cargo space is available on these vehicles, cantle rolls may be loaded therein. The bivouac area is policed.

e. In addition to route reconnaissance and dispatch of advance quartering groups, a careful reconnaissance of the general entrucking and detrucking areas must be made to locate regulating points, entrucking and detrucking points and routes thereto, and initial points. (See figs. 11 and 12.)

f. A staff officer with guides familiar with the routes is stationed at the regulating point to meet the motor transport column, communicate necessary instructions to the motor

transport officer in charge, and guide the trucks assigned to entrucking points. Because of the greater distance between vehicles in column required for entrucking horse cavalry than for other troops, particular care must be taken to see that the motor transport officer in charge is informed and understands the method of parking and required distances.

g. Arrangements are made in advance for traffic control in the areas during loading and unloading.

h. Plans for the supply of the unit while en route and after arrival at destination are studied and completed prior to the start of the march. The supply of motor transport units making the movement is the responsibility of the motor transport officer in charge.

■ 196. ENTRUCKING.—*a.* As a guide in making computations, the time required for entrucking trained troops is estimated as follows:

Personnel only, without animals or material: 15 minutes.

Personnel and animals, or material, or both: 30 minutes.

Troop units start their march from bivouac areas in time to permit them to reach the entrucking point and prepare for entrucking before arrival of the motor transport column, or, if it is already present, to start entrucking 30 minutes prior to time of departure.

b. Upon arrival at the entrucking point, units are separated into previously designated entrucking parties, each party moving to a point opposite its two trucks, or where it is estimated they will be stopped when the motor transport column arrives. Horses are unsaddled, bridles removed, and each set of riding equipment is held intact by use of the surcingle. Rifles in rifle scabbards are removed from saddles and retained by the individual to whom assigned.

c. In loading, the horses in each entrucking party are held by as few men as possible. The remaining men lower truck tail gates, remove kicking bars, place ramps, and load horses. A tractable horse is selected as the first to be loaded in each truck. The number of men engaged in loading an individual horse should be kept to a minimum. Noise and confusion excite the horses and serve to delay entrucking.

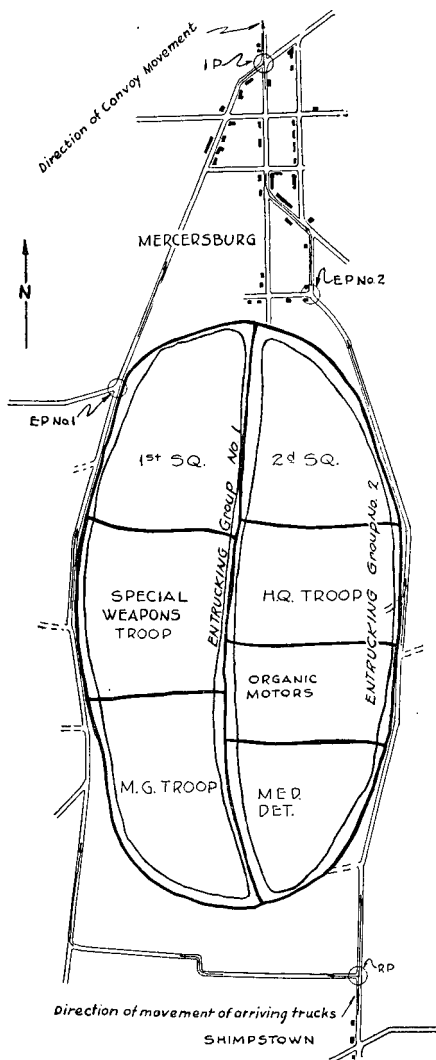


FIGURE 11.—Entrucking area.

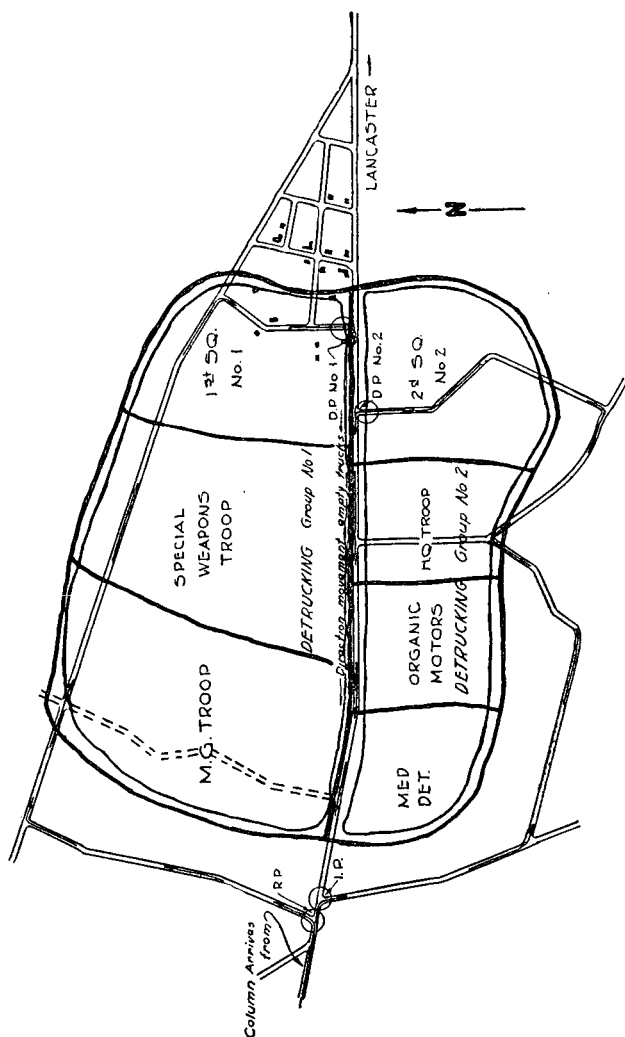


FIGURE 12.—Detrucking area.

d. Horses are led into trucks individually. Halter tie ropes are first tied securely around timbers or in bow eyes on the outside of the truck. A second knot is made around lashing hooks or lower bow eyes to prevent the first from loosening. Horses are tied rather close; however, care must be used to prevent tying them so close that the motion of the truck will cause the truck sides to rub or bump the lower jaws. As soon as the first truck is loaded with the horses, designated men load the appropriate equipment and weapons thereon while horses are being loaded on the second truck.

e. With the ordinary cargo truck, riding equipment, pack saddles, and loads are loaded in rear of the last horse and lashed in this position if ropes are available. Rifles in scabbards are so loaded on trucks by each individual soldier that they are instantly available in event of need. Canteen rolls may be carried on saddles, but space is saved if they are removed and piled separately.

f. When all horses and equipment are loaded, men board trucks, taking positions assigned them by the vehicle commander. Men are not permitted to sit with their legs hanging down over the tail gate or sides of the truck. The vehicle commander notifies his immediate superior by signal or otherwise when the truck is ready to move. No one is permitted thereafter to dismount from the truck prior to the start of the march.

■ 197. DETRUCKING.—a. The time required for detrucking personnel, horses, and matériel is about 15 minutes. On arrival at the regulating point for the detrucking area, the elements of the column are guided by members of the advance quartering party to detrucking points designated in accordance with the contemplated distribution of troops in the new area. The requirements or security for the area may necessitate the movement of certain small detachments to designated points before unloading.

b. Upon arrival of march units at detrucking points, the trucks close to detrucking distance and halt. Upon signal, detrucking begins and is executed in reverse order to that of entrucking, troops clearing the road immediately. As soon as detrucking is completed, the trucks clear the road. Until the road is cleared, it is not available for use of the troops.

c. Troops saddle and form and are then conducted to their respective assembly or bivouac areas by guides of the advance quarterming party. The detrucking area is inspected and cleared as soon as possible to make way for other elements assigned to the same detrucking point.

SECTION III

MOVEMENTS BY RAIL

■ 198. GENERAL.—*a.* The railroad is the most suitable, comfortable, and expeditious form of transportation for use in the movement of cavalry forces of all types and sizes for long distances.

b. Large forces of horse elements of Cavalry can be spared many miles of marching and loss of combat efficiency by using rail transportation when the distances to be covered are long and time and condition of men and animals are primary factors.

c. Small forces of horse elements of Cavalry can march at faster rates of march and for greater distances without materially reducing their combat efficiency than can large forces of horse elements of Cavalry. They can also be easily transported by motor transport. For this reason they will probably not be transported by rail unless the distance to be covered is very great or the situation and mission require.

d. Mechanized and motorized elements of Cavalry using suitable roads can within reasonable limits march as fast as they can be moved by rail.

e. Dependent on ready availability of railway equipment, the time required by a cavalry force to prepare for a rail movement, assemble at entraining stations, load equipment, clear entraining stations, unload equipment, and re-form or redistribute its forces in the detraining area determines the minimum distance over which troops can be moved more rapidly by rail than by marching.

f. The following War Department publications contain practically all the information needed for the movement of Cavalry by rail:

(1) FM 101-5 contains forms of orders, check lists for orders, and entraining and detraining tables.

(2) FM 100-5 discusses arrangements, plans, preparations, and organization of the command for movement by rail. It also discusses the duties of the commander of troops and the tactical and security aspects that must be considered in making such a move.

(3) FM 101-10 contains detailed information relative to the capacities of the various types of railroad cars and other pertinent data.

(4) FM 25-5 contains information relative to the type of cars, their preparation for shipment of animals, method of loading animals into railroad cars, and care, feeding, watering, and resting of animals during movement by rail.

(5) FM 25-10 discusses types of cars suitable for transport of motor vehicles, preparation of vehicles for loading, facilities needed for loading motor vehicles, equipment necessary, and methods of unloading and securing motor vehicles on railroad cars.

(6) FM 100-10 contains information relative to the general organization, operation, and control of rail transportation.

(7) FM 100-15 discusses the strategical aspects of rail movements.

g. The specific details peculiar to the organization and preparation of Cavalry for a movement by rail and the entraining and detraining of cavalry troops, not covered in the above publications, are similar to those peculiar to the movement of Cavalry by motor transport, considering only the difference in the mode of transport being used. (See sec. II.)

SECTION IV

WATER TRANSPORT

■ 199. GENERAL.—*a.* Cavalry being transported by water employs the same methods, procedure, and organization as do other troops, the only difference being the additional provisions which must be made for the care and shipment of the animals.

b. The following War Department publications contain the necessary information for the transport of Cavalry by water:

(1) FM 25-5 contains information relative to the kind of vessels required, instructions and specifications for the conversion of commercial vessels, equipment required, inspection

necessary, duties of the remount transport officer, transport veterinarian and attendants to animals, the loading and care of animals while on transport, preparation of animals for shipment, and debarking of animals.

(2) FM 25-10 contains information relative to the preparation of motor vehicles for shipment by transport, facilities for loading, securing of vehicles on board, and the unloading of vehicles from the transport.

(3) FM 101-10 contains information relative to preparation of embarkation and debarkation tables, equipment tables, tonnage requirements of troop and supply ships, loading plans, notes on loading personnel, animals, and vehicles, and data relative to the loading and discharge of cargo.

c. The details peculiar to the organization of Cavalry for movement by water are generally the same as for movement by any of the other methods already discussed, the chief difference being in the mode of transport, the purpose for which the movement is being made, and the tactical and strategical situation at the time. These conditions indicate the changes necessary for the successful execution of the movement of Cavalry by water transport.

SECTION V

SHELTER

■ 200. GENERAL.—*a.* Cavalry observes the same rules, regulations, and procedure in occupying shelter in bivouacs, camps, cantonments, and billets as do other troops. The presence of animals in the Cavalry necessitates the use of additional camping space, shelter, cover, and watering facilities.

b. The following War Department publications contain information relative to shelter for troops and are applicable to Cavalry:

(1) FM 100-5 discusses the different types of shelter used, tactical considerations, security, distribution, and placing of troops in shelter areas, duties of the commander, and protection from air observation.

(2) FM 101-10 discusses camps and bivouac areas, gives a typical diagrammatic lay-out of a tent camp or bivouac area, capacities of different type buildings and tents, and the amount of ground needed for camp sites for units of different sizes and composition.

(3) FM 21-10 discusses the selection and sanitation of camp sites, the desirable features of a camp site, the sanitary installation of kitchens, latrines, toilet facilities, bathing, washing clothes, and dumps.

(4) FM 100-10 discusses the supply and administration of camps.

c. This section presents only such additional information relative to shelter for Cavalry as is not covered in the above War Department publications.

■ 201. CAMP SITES.—*a.* The location of available water, forage, and other supplies, and the road net, influence the selection of a shelter area for Cavalry. The tactical situation, the probability of enemy attack, and the possible direction of the attack also influence the choice.

b. Shelter areas should have abundant and easily obtainable or accessible water supply, ground with good drainage, porous soil with tough turf for horse elements, firm standing, an adequate road net for motorized and mechanized vehicles, and sufficient area to accommodate the command. Areas should be located near sources of supplies with adequate routes thereto. Concealment from air reconnaissance, cover from air attack, and obstacles against mechanized attacks for both men and animals are essential in the combat zone.

c. To protect the command against observation and attack by air, the following measures regarding concealment should be taken:

(1) Tents should never be pitched in precise, regular rows unless completely concealed from the air. All elements must be appropriately dispersed to reduce vulnerability and aid in concealment.

(2) Full use should be made of available cover, both natural and artificial, for all elements of the command in order to minimize the visibility from air observation. Wooded areas are preferable to open spaces. Backgrounds of uniform appearance and color are avoided. Animals are dispersed and grouped by half-squads or squads, the integrity of units being maintained. Motor or mechanized vehicles are placed so as to give them cover and so that when desired their armament can be used to repel an air attack. Appropriate camouflage measures must be taken to supplement available cover.

■ 202. ORGANIZATION.—*a.* Quartering parties may make detailed arrangements for the occupation of the shelter area,

including the location of picket lines, motor parks, kitchens, latrines, and other facilities. Upon the arrival of the command, unit representatives or guides meet the troops, conduct them to the shelter areas, and transmit all instructions received, thus permitting the entire column to continue movement until each unit is in its proper area.

b. In large commands, special attention must be given to the location of maintenance units with respect to the units which they are to serve.

c. When regular formations are used, the units are so arranged as to take full advantage of the available areas. In the combat zone regular formations in bivouac or camp are avoided.

d. Vehicles should be located with regard to convenience in servicing. Those which are likely to be used frequently should have easy access to the routes they will follow.

e. Shelter areas are assigned by the regiment to squadrons and separate troops and by the squadrons to its troops. When the terrain is suitable and conditions permit, troops go into shelter as units, otherwise shelter areas are assigned by the troop commander to platoons and troop headquarters, the integrity of tactical units being maintained. Due to lack of cover, units may be dispersed in order to obtain concealment and protection but must be so located as to insure prompt tactical employment.

203. MAKING CAMP.—*a. Horse elements.*—Troops or subordinate elements are marched to their areas and orders are issued for making camp. Animals are cared for as prescribed in FM 25-5. After animals have been cared for, shelter tents are pitched if the tactical situation permits. Weapons are thoroughly cleaned. The necessary picket line, motor park, and other guards are posted at once.

b. Mechanized elements.—(1) The troop is marched to its area and orders are issued for the making of camp. Immediately after vehicles have been parked, the drivers and assistant drivers, under their car commanders, perform first echelon maintenance under the supervision of the troop maintenance officer and chief mechanic. Required reports are made to the unit motor officer. The necessary motor park and other guards are posted at once. Weapons are thoroughly cleaned and shelter tents, if used, are pitched. Motor maintenance personnel check vehicles while the mo-

tors are warm and initiate necessary repairs at once. The maintenance and repair of vehicles should be completed during daylight when possible.

(2) When vehicles are parked in column, sufficient distance or intervals must be available between vehicles to permit moving individual vehicles.

(3) Mechanized elements may bivouac along the roadside, using one or both sides of the road, with vehicles off the road and parallel, oblique, or perpendicular thereto, depending upon the space and cover available. The road must be kept open for general traffic, with sentinels and warning lights properly located. Tents and facilities are placed off the road. When the vehicles are utilized as shelter for the personnel, proper safety precautions must be observed and enforced.

■ 204. **BREAKING CAMP.**—In general, the procedure in breaking camp is as follows:

a. Immediately after reveille and before breakfast, animals are fed, men perform their toilets, strike tents, and make their rolls.

b. After breakfast—

(1) In horse elements, animals are brushed off, saddled, watered if facilities permit, and the troop formed prepared to march. While this is being done, designated personnel load troop equipment, police camp, close latrines, strike officers' tents, and perform such other work as may be necessary.

(2) In mechanized elements, motors are started and allowed to warm up. In cold weather, special precautions must be taken in order to avoid any delay due to the difficulty of starting cold motors. Personnel leaving camp last should be used for general camp police, closing of latrines, and caring for officers' tents.

c. The march unit commander prescribes the hour of departure. Arrangements for the march should be such that men are allowed the maximum time for rest. It is especially important, for reasons of health, that men be permitted reasonable time and opportunity to respond to calls of nature prior to initiating the march. The use of regularly assigned details decreases the time necessary to break camp. The camp area is inspected by an officer prior to departure.

CHAPTER 7

SUPPLY

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SECTION I

GENERAL

■ 205. GENERAL.—*a.* The general doctrine on supply and detailed information concerning the supply of divisions are contained in the following War Department publications:

(1) FM 101-10 discusses classes of supply, basic weights for computation of loads, standard loads for cargo vehicles, class I supplies received by daily telegram, distribution and prescribed loads of class I supplies, tonnage requirements of class I and class III supplies, requisition and shipment of class II, class III, and class IV supplies, estimated requirements of gas, oil and grease, estimate of gasoline expenditure, prescribed loads of class III supplies, day of supply in pounds per man per day, daily requirements of class V supplies for various types of combat, small arms, ammunition reports, and allocations, loading of motor vehicles, hauling, principal method of conversion of tons to trucks, and the method of supply of the cavalry division (horse).

(2) FM 100-10 contains information relative to the general organization, operation, and control of supply.

(3) FM 101-5 discusses the duties of the G-4 section and orders for administration of supply.

(4) Tables of Basic Allowances list, in general, the supplies to be provided various units and the organic means for transporting them.

b. While the fundamentals of supply are the same for all arms and services, the methods of supply for Cavalry are somewhat different because of the inherent characteristics of the arm and the increased distances at which cavalry units may operate from supply points.

c. This chapter treats of supply in the field. It is confined to the supply of cavalry divisions, brigades, regiments, and smaller units.

■ 206. RESPONSIBILITY.—*a.* Supply is a function of command. It is the duty of every commander regardless of his grade to insure the supply of his command. However, the attention of commanders must not be diverted from the tactical task at hand by anxiety concerning matters of supply.

b. The impetus of supply is from the rear. In general, stores of supplies are echeloned in decreasing amounts from rear to front. Higher echelons place the required amounts at supply points within the reach of the trains of regiments and separate units. Regimental trains obtain their supplies from these points.

■ 207. METHODS OF EFFECTING SUPPLY.—In general, there are three methods of effecting supply:

a. Automatic, in which supplies are delivered without requisition or special arrangements, based on strength returns in men and animals.

b. By requisition, similar to the method used in garrison.

c. By special arrangements, to meet needs that cannot be entirely foreseen.

■ 208. ORGANIZATION FOR SUPPLY.—*a.* The organization for supply consists, in the cavalry division, of those representatives of the supply branches on the staff of the division commander, the service units and trains under their command, and the assistant chief of staff, G-4. In brigades, regiments, and separate units it consists of the unit supply officer (S-4), certain supply personnel, and unit trains. When part of the division, brigades do not function in the chain of supply, except for the brigade headquarters troop and the brigade weapons troop. When detached from the division, the brigade assumes the supply responsibilities of the division for the supply of its organic and attached units. The necessary means in the form of transportation and operating personnel to enable the brigade to function separately are provided by attachment from the division.

b. The cavalry regiment, horse and mechanized, receives its supplies through the supply agencies of the headquarters to which it pertains.

c. In regiments, the regimental supply officer (S-4) supervises and coordinates the supply of subordinate organizations in accordance with the plan for supply approved by the regimental commander. He is assisted in effecting supply by certain other staff officers, such as the surgeon, the motor maintenance officer, the transportation officer, and the communication officer. Each of these officers is responsible for initiating requests for supplies pertaining to his activity and, after receipt, for their care.

d. Except when detached, squadron commanders have no supply responsibilities other than for ammunition supply in combat. When detached, the squadron supply officer (S-4) functions for the squadron and attached elements similarly to the regimental S-4 for the regiment.

e. Troop commanders are responsible for anticipating the requirements for supplies for their troops and initiating timely requests therefor. As assistants for supply, troop commanders have supply, mess, stable, and motor sergeants.

■ 209. BASIS OF SUPPLY OF UNITS.—a. The supply of cavalry regiments is based on the assumption that units should be encumbered with only the necessary minimum of supplies, and that replenishment of class I and class III supplies is effected daily and class II and class IV supplies when required.

b. Regimental echelons maintain within themselves a level of supplies, including ammunition consistent with the tactical situation. This level is prescribed from time to time by higher authority and is based on the system for replenishment established by higher echelons. In general, the minimum level is that prescribed by Tables of Basic Allowances. The capacity of the regimental train is sufficient to carry these amounts. If greater amounts are prescribed by higher authority it may be necessary to attach vehicles from the quartermaster squadron or other supply unit for this purpose.

c. Daily replenishment of supplies is effected by the higher echelon placing the supplies within reach of the regimental trains at designated supply points.

■ 210. PROCEDURE.—In approaching any problem of supply in the smaller units (brigades and lower), commanders and supply officers consider the following points:

a. The supplies and equipment required—

(1) By Tables of Basic Allowances.

(2) By orders of higher authority.

(3) For special situations.

b. The means available to transport these supplies and equipment:

(1) Man and mount (horse or vehicle.)

(2) Pack animals.

(3) Cargo transportation.

c. The capacity of these means in pounds, rounds, or tons.

d. Where these supplies can be obtained.

e. Method of loading the supplies on the means of transportation available.

f. What surplus cargo capacity is available or what must be procured.

■ 211. LOCAL PROCUREMENT.—Cavalry may often have occasion to procure supplies from local sources within the theater of operations. Methods and procedure are covered in FM 100-10.

SECTION II

CLASS I SUPPLY

■ 212. GENERAL.—a. Rations for men and animals, fuel, and illuminants and similar articles are supplied to the units automatically. As these are consumed at a fixed amount a day per man (or horse), requirements are determined from daily strength reports. For instructions relative to strength reports, see FM 100-10.

b. (1) In general, there are three methods of placing rations, forage, and other class I supplies in the hands of the using organizations within the cavalry division. The division commander prescribes the method to be used.

(a) *Unit distribution.*—The quartermaster squadron breaks down the supplies into regimental and separate unit lots at the railhead, truckhead, or other point, and delivers them to the regimental kitchen areas or detached unit area. Here they are turned over to regimental personnel who sort them into lots for each kitchen and turn them over to the individual kitchens.

(b) *Railhead distribution.*—Regimental and separate unit trains go to the railhead (truckhead) where supplies have previously been broken down into regimental lots, load the supplies, and deliver them to organization kitchens. This

method is used when the division quartermaster train is not available and when the railhead (truckhead) is within reach of the regimental train.

(c) *Dump distribution.*—A division dump (or dumps) is established by the division quartermaster squadron where the supplies are broken down into regimental and separate unit lots and issued to unit trains that go back for them. The unit trains then deliver the supplies to the organization kitchens. This method is used when the railhead (truckhead) is too far removed for unit trains to reach and when sufficient division transportation for unit distribution is not available.

(2) A combination of two or more of (1) (a), (b), and (c) above.

c. At times, the conditions under which Cavalry operates may necessitate intermittent supply at 2 or 3 day intervals rather than daily. In such instances, additional transportation from the quartermaster squadron should be attached to unit trains to carry the additional supplies required.

d. Kitchens are not always bivouacked in a regimental rear echelon, but are frequently located in squadron groups or with their troops. In these instances class I supplies are delivered to the smaller groups or individual kitchens, whatever the method of distribution used.

e. Normally supplies are delivered to units during the hours of darkness and are for the ration cycle (3 meals) beginning the following day.

f. Cooked meals are delivered to the troops by truck, by pack animals, or by dismounted carrying parties.

g. Long forage is especially important under campaign conditions. Unless grazing is ample and can be fully utilized, every effort should be made to secure hay. Whenever practicable, hay is procured locally. Otherwise it should normally be included in the automatic daily supply. This will require special transportation arrangements to deliver it to organizations. Within the cavalry division the tractor-trailers may be advantageously utilized for this purpose.

■ 213. **PRESCRIBED LOADS.**—a. Present regulations (FM 101-10) prescribe the class I supplies to be carried within the cavalry division. These amounts may be increased or decreased by instructions of the division commander.

b. The following table shows where and how the class I supplies may be carried in the cavalry division.

AMOUNTS OF CLASS I SUPPLIES, IN DAYS OF SUPPLY, CARRIED IN CAVALRY DIVISION, AND WHERE CARRIED

Carried by (or for)—	Field ration A or B	Field ration C	Field ration D	Grain ¹	Fuel, oil, or wood
Each troop for its own use.....	2 1		1	2 1	1
Division, for entire division, on train of quartermaster squadron.....	4 1	5 1		4 1	4 1
Total in division.....	2	1	1	2	2

¹ For all animals.

² Part may be carried on individual and part on unit trains.

³ Part or all of unconsumed portion may be carried on animals; a part only may be carried on unit train.

⁴ Not a rolling reserve, but for next succeeding issue.

⁵ May be carried either in units or in quartermaster squadron at direction of division commander; within units, part may be carried on individuals and part or all on unit trains as directed by unit commanders.

■ 214. CAVALRY REGIMENT, HORSE AND MECHANIZED.—The method of supply of rations, forage, fuel, and illuminants and similar articles, prescribed for the regiments of the cavalry division, apply to the cavalry regiment, horse and mechanized, except that trains of the corps or army perform the functions prescribed for the quartermaster squadron of the cavalry division.

■ 215. RECONNAISSANCE TROOP, MECHANIZED, INFANTRY DIVISION.—This unit is supplied by the infantry division in a manner similar to that described for the regiment in the cavalry division.

SECTION III

CLASS II SUPPLY

■ 216. GENERAL.—a. Requisitions are submitted for individual and organizational equipment. Normally the requirements for this class of supplies are such that few if any are required while units are engaged in combat operations. Usually units are rehabilitated during periods following com-

bat operations while they are in rear areas for rest and recuperation.

b. When units go to rear areas for any purpose, requisitions are submitted for all items of uniforms and other individual and organizational equipment required to complete or replace the equipment authorized by Tables of Organization and Tables of Allowances. Necessary supplies are then delivered to units at railheads, supply points, or depots of supply arms or services concerned, and issued to using organizations.

c. When items of equipment vital to continued effort in combat, such as trucks, arms, horses, and combat vehicles are needed, special requisitions or requests are made for their supply in forward areas.

SECTION IV

CLASS III SUPPLY

■ 217. GENERAL.—Motor fuel and lubricants are issued to units automatically, no requisitions being required. The requirements of motor fuels and lubricants depend entirely upon the amount of operation of motor vehicles, and for this reason the rate of demand is seldom if ever constant. Delivery of class III supplies to units is based on statements of expenditure submitted through supply channels, with morning reports, or upon authorized demands made to any gasoline and oil supply point where such supplies are available.

■ 218. PRESCRIBED LOADS.—In all cavalry units, all motor vehicles carry 1 day's supply of gasoline and oil in the operating tanks of vehicles. In addition there is carried on the cargo vehicles of unit trains, in containers, 1 day's supply for all vehicles in the unit. Higher commanders may prescribe that the amounts carried be increased for a particular operation.

■ 219. PROCEDURE.—a. The normal method of supply of gasoline and lubricants is to locate supply points on main supply routes, and supply points for other supplies where vehicle operating tanks are filled.

b. For those vehicles which cannot be sent to such supply points, gasoline and lubricants, in containers, are delivered in a manner similar to that used for rations. Ordinarily the operating tanks of vehicles are refilled from the con-

tainers carried on cargo trucks of unit trains prior to the time of delivery of the additional supply. The containers so emptied are exchanged for full containers. When supplies are being received at railheads or other supply points, empty containers are taken thereto and exchanged for full containers. In some situations empty containers may be dumped in designated locations where they are picked up later by rear echelons.

SECTION V

CLASS IV SUPPLY

■ 220. GENERAL.—*a.* Class IV supplies are furnished to units in response to special requests or by direction of higher echelons. The requirements for this class of supplies depend entirely on the combat operations in progress or contemplated. The representatives of the different supply branches (engineer, signal, quartermaster, medical, etc.) on the special staff of the cavalry division function for this class of supplies. These officers also command the service units pertaining to their arm or service which are organic in the division.

b. Within the combat area, supplies are issued to cavalry units as needed. Generally, requirements are so limited in quantity that those supplies necessary for the services are issued at the service installations, medical supplies at clearing and collecting stations, and others at repair shops or field parks. Engineer supplies in certain operations may be required in considerable quantity, particularly in defensive operations. In such situations, engineer supply points are established well forward in the combat area from which tools and supplies are issued to cavalry units.

SECTION VI

CLASS V SUPPLIES

■ 221. GENERAL.—Ammunition is issued to cavalry units in accordance with the requirements of the situation. The requirements for ammunition depend solely on the combat operations in progress or contemplated. The division ordnance officer functions for the supply of small-arms ammunition to all units of the cavalry division.

■ 222. **PRESCRIBED LOADS.**—*a.* The amount of ammunition carried by cavalry units is specified in Tables of Basic Allowances and in FM 101-10. Expressed in general terms ammunition is carried as follows:

(1) *On individual or with gun.*—Ammunition as prescribed in Tables of Basic Allowances.

(2) *In ammunition trucks of unit train.*—A refill of that on the individual or with the gun, except that no additional ammunition is carried for scout cars and train defense weapons.

(3) *In division train.*—A refill of the ammunition carried in the unit ammunition trucks, plus a one-half refill of ammunition carried in scout cars and with train defense weapons. This reserve of ammunition within the division is a rolling reserve; that is, sufficient cargo space is provided organically to permit keeping the prescribed amounts loaded and available for movement at any time, except when urgent need for transportation justifies dumping loads.

b. When subordinate units of the division are detached, sufficient transportation from the train of the division quartermaster squadron should accompany them to transport their proportionate amount of the division reserve of ammunition.

c. The ammunition on the ammunition trucks of regimental trains is carried ready for use. Rifle and pistol ammunition is carried in cavalry bandoleers (88 rounds of rifle and 7 rounds of pistol ammunition each) in sufficient number to issue one to each rifleman. Machine-gun ammunition is carried loaded in belts.

■ 223. **PROCEDURE.**—*a.* As a rule, all ammunition carrying elements of forward echelons are kept filled.

b. When early combat can be foreseen, additional ammunition is made available for the weapons. In these cases a cavalry bandoleer may be issued to each rifleman prior to the day's march to be carried around the horse's neck or over the shoulder of the individual when dismounted. Within the cavalry division sufficient ammunition trucks of the regimental train are normally then sent to a division ammunition control point, where they are routed to a designated ammunition supply point established by a higher echelon (army, detached corps and, exceptionally, the cavalry division), and draw additional ammunition. When an ammunition con-

trol point is not established by the cavalry division, trucks of the regimental train are sent direct to a designated ammunition supply point. If trains are grouped under higher authority, ammunition trucks are released to regiments or squadrons so that the ammunition carried thereon may be available in combat areas. The operation of trucks for replenishment of the supply of ammunition is usually under the control of regimental or squadron supply officers.

c. Trucks dispatched to an ammunition supply point are provided by the S-4 with a written list of the quantity, type, and caliber of ammunition to be obtained. This is the only requisition required.

d. Whenever the transportation of the regiment is not sufficient to haul the necessary amounts of ammunition in the required time, additional trucks from the quartermaster squadron are attached to supplement the regimental transportation.

e. Usually ammunition within the regiment is held mobile on trucks. Whenever possible, ammunition should be held mobile on trucks at supply points. In fixed situations, such as position defense, which is exceptional for Cavalry, in retrograde movements, and when the demand for transportation requires, ammunition may be dumped on the ground at supply points.

f. Ammunition trucks of the regimental train operate forward of army ammunition supply points. In delivering ammunition to organizations, trucks are driven as far forward as cover and the conditions of combat permit. From that point ammunition is transported to the firing line by pack horses, led horses, and carrying parties.

g. Following combat, all ammunition trucks of all echelons are refilled promptly to prescribed loads. Ammunition expenditure reports are prepared and forwarded by all organization commanders in accordance with existing instructions.

■ 224. ADDITIONAL MEANS.—In cavalry operations on terrain over which motor transportation cannot operate, pack animals within the cavalry division afford an additional means for transporting ammunition. They are used as a link in the chain of ammunition supply between motorized trains and the regimental supply point. Where the distance be-

tween the motorized trains and the combat units is excessive, ammunition may be transported by air.

■ 225. CAVALRY REGIMENT, HORSE AND MECHANIZED, AND RECONNAISSANCE TROOP, MECHANIZED, INFANTRY DIVISION.—Ammunition supply in these units is the same as that described above for the elements of the cavalry division, except that they operate under the unit to which they pertain. The regiment, horse and mechanized, may be attached to an infantry division for supply purposes.

SECTION VII

TRAINS AND CARGO TRANSPORTATION

■ 226. KINDS OF TRAINS.—*a.* Trains within the cavalry regiment are classified as regimental, squadron, and troop trains. Certain elements of the troop, squadron, or regimental train may be formed into an ammunition train, a kitchen train, a gasoline and oil train, a porté train, or a maintenance train, each named according to its function.

b. Within large bodies of Cavalry, units consisting of transportation and operating personnel whose functions are to serve the organization as a whole are service units. The trains of these units are designated according to the service unit which furnishes them, for example, 1st Quartermaster Squadron.

■ 227. POOLING TRANSPORTATION.—*a.* A pool is a central agency through which transportation is dispatched to perform designated tasks. Transportation in a pool may be separated physically or assembled at a location from which the transportation is dispatched and to which it returns.

b. Under many conditions, the pooling of motor transportation may be more economical and efficient than the continuous allotment of vehicles to specified units. Pooling also facilitates motor vehicle maintenance.

c. Transportation in a pool is used in either of two ways: by detail as required or by special assignment. In the first case, transportation and operating personnel are detailed to perform specified tasks. In the second case, transportation and operating personnel report at a given time and for definite periods to a unit or agency for work.

■ 228. **TRAIN BIVOUACS.**—*a.* In order that troops may retain their mobility, troop trains bivouac with their troops whenever possible.

b. A bivouac area for regimental trains should be protected from artillery fire, located near a passable road to the front and rear which does not interfere with troop movements, concealed from hostile air and ground observation, in terrain suitable for defense against air or mechanized attacks, and of sufficient size to accommodate the train and permit ready access and egress from the area. In addition, whenever practicable, the train bivouac area should provide suitable standings for vehicles and cover and space for servicing and maintenance operations.

c. Troop and regimental trains should not be bivouacked farther to the rear than necessary nor have an obstacle, which may become impassable, between the train and the troop or regiment which it serves.

■ 229. **TYPES AND CHARACTERISTICS OF CARGO TRANSPORTATION.**—The types of cargo transportation assigned to cavalry units are as follows:

a. Pack animals.—(1) The total load carried by a pack mule of the pack troop, quartermaster squadron, averages 280 pounds, of which 200 pounds are available for cargo purposes. For long marches this useful load should be decreased. The rate of march is $4\frac{1}{2}$ to 5 miles an hour.

(2) The total load carried by a combat pack horse varies from 186 pounds for the heavy machine gun to 214 pounds for the pack radio set. The rate of march of pack horses is the same as for other horse elements.

b. Two and one-half ton six-wheel drive truck.—This is the standard cargo vehicle for the Cavalry and is also used for carrying combat equipment, kitchens, maintenance personnel and equipment, and the band.

c. Four and one-half ton semitrailers, with truck tractors (for cargo and animal transportation.)—These are used mainly for porté purposes in the cavalry regiment, horse and mechanized; for cargo purposes for bulk loads, such as grain and hay; and for porté purposes within the cavalry division.

d. Special purpose trucks for communication purposes, repair and maintenance units.—One-half-ton to four-ton types.

■ 230. REGIMENTAL, SQUADRON, AND TROOP TRAINS OF HORSE ELEMENTS OF CAVALRY.—*a. Make-up.*—The regimental and troop trains within the cavalry brigade consist of the cargo transportation, animal and motor, organically assigned to regiments and troops for combat purposes. These trains are as follows:

(1) Troop trains consist of animal or motor transportation with operating personnel in the brigade headquarters troop and the troops within the regiment. The troop trains of horse troops consist of the pack animals assigned to troop headquarters.

(2) Squadron trains consist of the motor transportation which is attached from the regiment when the squadron is detached or for other purposes.

(3) (a) Regimental trains consist of the motor transportation with operating personnel assigned to the headquarters and service unit of the regiment for the combat requirements of the entire regiment. In the horse regiment, the regimental train consists of the cargo vehicles of the transportation platoon and of the maintenance section of headquarters and service troop. The regimental train may be divided as follows:

1. *Kitchen section.*—This section consists of the kitchen trucks which transport prescribed rations for men, cooking and mess equipment, and mess personnel.

2. *Ammunition section.*—This section consists of the combat trucks which transport ammunition and other supplies essential for maintaining combat.

(b) The cargo vehicles of the regiment are assigned organically to the transportation platoon of headquarters and service troop and are under regimental or higher control for operation and movement. They are unit loaded for the specific purpose of serving individual troops and are normally released to and bivouac with the troops to which allotted.

(c) Any transportation and operating personnel attached to a regiment for the purpose of carrying reserve stocks of ammunition, rations, motor fuel and lubricants, or organizational equipment or baggage not needed to initiate combat, operate as part of the regimental train.

(d) The regimental train is a part of the rear echelon of the regiment.

b. Supply limits.—The maximum distance over which a division can be supplied continuously by its own transport depends on roads, weather conditions, loads, condition of transport, enemy activity, and the length of time that supply is necessary. Motor transportation under reasonable conditions can cover 7 to 8 hours driving time a day continually and as much as 10 to 12 hours driving time for short periods.

c. Operation.—(1) Troop trains (pack animals) are commanded and normally controlled by the troop commander and operated by troop personnel. In combat they remain as close to the troop to which they belong as conditions permit.

(2) The regimental train also increases the mobility of the regiment by permitting the transfer to motor transportation of the loads normally carried by the individual mounts and pack horses. The regimental train normally operates as a kitchen train and an ammunition train.

(3) While in practice a definite number of trucks is normally allotted for the use of each troop for the transportation of the supplies and equipment pertaining to that troop, the employment of the regimental train must be flexible to provide for varying situations. Thus the train forms the regimental pool of motor transportation to be allotted to troops or squadrons or assigned tasks for the regiment as a whole as the situation demands.

d. Loading.—The loading of troop trains and the trucks of the regimental train allotted for use by the troop is ordinarily a troop function. The supply and tactical situation may require that squadron or regimental commanders prescribe the supplies and equipment to be transported and the method of loading, especially if additional ammunition is to be transported or the load on mounts is to be reduced.

e. Shelter.—When in camp or bivouac, the trains are normally with or near the organization whose supplies and equipment they are transporting.

f. March.—The trains of the cavalry division have varying degrees of mobility. All, however, can keep up with the marching columns of combat troops on normal marches. The pack transportation of the trains normally marches

with the unit to which it pertains, but it may be grouped under higher control. Motor elements of the regimental trains are normally grouped to follow the column or columns by bounds or to move by separate routes. Normally the ammunition train precedes other motor trains in order to facilitate the release of ammunition trucks to troops when needed. Exceptionally, the regimental train may remain at a location in rear to be moved forward when desired.

g. Combat.—(1) Cavalry must be ready for combat regardless of the fact that it may temporarily be separated from its trains. When all trains are present, supply arrangements for combat conform to the procedure of supply in general use. When all trains are not present and when contact with the enemy can be foreseen, the loading of the trains which accompany the columns should be such as to facilitate the contemplated action.

(2) Cavalry engagements are normally of short duration. Attention is directed principally to ammunition supply and to the evacuation of casualties. Usually the command has with it sufficient ammunition and medical equipment to meet its immediate needs. The trucks of the ammunition train, if not already released, are released and join the troops in their assembly areas to issue ammunition. After an engagement has been completed and organizations are being reorganized, immediate steps should be taken to replenish the prescribed loads of ammunition carried by individuals and by vehicles.

h. Control of trains.—(1) In order to obtain the maximum efficiency from the command as a whole, it is necessary in any situation that the movement of the regimental trains and the trains of attached service elements be coordinated with the movements of the combat troops. It is also essential at times to restrict the movement of trains for various reasons. This coordination and restriction of movement is exercised by the commander of the unit through his staff (S-4).

(2) When trains have been retained under the control of a higher echelon, they are released to the control of the commander to whom they belong when it becomes necessary for them to operate in their normal functions. A released train must conform to all traffic instructions issued by higher authority. In general, trains move under the control of S-4

and are released by him for operation whenever the situation requires.

■ 231. CAVALRY REGIMENT, HORSE AND MECHANIZED.—The types, characteristics, and employment of the trains of this regiment are in general similar to those of the cavalry regiment, horse.

■ 232. TRAIN DEFENSE.—See FM 25-10.

CHAPTER 8

EVACUATION

■ 233. EVACUATION OF PERSONNEL.—*a. General.*—General instructions for the evacuation of personnel are covered in FM 100-10. More detailed discussion of procedure is presented in FM 8-10.

b. Horse Cavalry.—(1) *Medical squadron.*—The medical squadron of the cavalry division is responsible for the collection and clearing of all casualties in the division. Whenever necessary, the medical squadron is reinforced by additional medical units. When elements of the division are detached, sufficient medical personnel and equipment of the medical squadron should be attached to perform the necessary care and evacuation of casualties.

(2) *Regimental medical detachments.*—(a) Medical detachments with units of the cavalry division are so organized that they provide regiments and similar detached units with medical personnel, supplies, equipment, and facilities for the care and evacuation of sick and limited battle casualties under field conditions. Regimental medical detachments are responsible for collecting, classifying, and tagging all casualties within the regiment. They provide the necessary medical personnel for troops and squadrons when they are operating with the unit and when detached. When the situation demands, the medical detachment establishes the necessary aid stations for the unit it serves. These stations are evacuated by the collecting troop of the medical squadron.

(b) Medical detachments with the cavalry regiment, horse and mechanized, are so organized as to perform the same necessary medical functions as the medical detachments with the cavalry regiment, horse. When acting alone, collection and evacuation of casualties are effected by the medical units of the corps or of the nearest infantry division.

■ 234. EVACUATION OF ANIMALS.—*a.* The veterinary section of the medical detachment with cavalry regiments, horse, is charged with the care, collection, and evacuation of sick and wounded animals within the regiment. The veterinary sec-

tion is so organized as to provide necessary veterinary personnel and equipment for squadrons, either when operating with the regiment or when detached. When the situation requires, veterinary sections establish the necessary veterinary aid stations for the unit which they serve, and notify higher veterinary units of the animals to be collected and evacuated.

b. The veterinary section of the medical detachment of the cavalry regiment, horse and mechanized, functions in the same manner as with the horse regiment. Clearing of veterinary aid stations is a function of veterinary units which serve the corps. (See FM 8-10.)

■ 235. MAINTENANCE AND EVACUATION OF MOTOR VEHICLES.—*a. General.*—(1) Military automotive maintenance is described in detail in FM 25-10.

(2) Evacuation of automotive vehicles, which require repairs beyond the facilities of the regimental maintenance units, ordinarily is a function of service elements of a higher echelon. Such vehicles are left in the service park or place where disabled and the higher headquarters is notified.

b. Regiment, horse.—A motor maintenance section with one 2½-ton truck, one pick-up truck, and two motorcycle tricycles, and suitable personnel, are provided to perform limited maintenance under the supervision of the regimental motor maintenance officer. On the march, the maintenance personnel vehicles fall out to render assistance of a temporary nature or to direct the vehicle to await the arrival of the maintenance sections of the supply services. Combat equipment receives priority of the maintenance facilities. Such maintenance as cannot be performed by the regiment, or for which it is not responsible, is performed by the maintenance sections of the supply services. These may be attached to the regiment when it is detached from the division.

c. Regiment, horse and mechanized.—(1) *Troops.*—Troops are responsible for only limited maintenance. (See FM 25-10.) This is performed by the maintenance personnel and equipment belonging to the troop under the direction of the troop commander.

(2) *Regiment.*—(a) The motor maintenance section of the service troop is responsible under the direction of the motor officer for maintenance and repair which cannot be

accomplished by the troops and for which time, equipment, supplies, and personnel are available within the section. (See FM 25-10.) Repairs that cannot be performed by the regimental motor maintenance section are made by the maintenance elements of higher echelons. Maintenance sections from higher echelons may be attached to the regiment when the situation demands.

(b) On the march the regimental motor maintenance section performs maintenance and repair beyond the troop's capacity. Vehicles that cannot be repaired are either taken to designated vehicle collecting stations or are left to be repaired by the maintenance sections of the supply services. The maintenance section during an advance does not concentrate its efforts on the repair of vehicles when the time required for repair is problematical. The mobility of the maintenance section should not be reduced by towing vehicles whose usefulness or necessity in combat in the immediate future is doubtful.

(c) The maintenance platoon furnishes to the troops limited supplies and equipment which are necessary in the maintenance work performed by troop mechanics.

d. Reconnaissance squadron, mechanized, cavalry division and reconnaissance troop, mechanized, infantry division.—Each troop of the mechanized reconnaissance squadron and the reconnaissance troop, mechanized, infantry division, has a maintenance section in troop headquarters which performs limited maintenance as prescribed in c above for the troop, cavalry regiment, horse and mechanized.

■ 236. PRISONERS OF WAR AND STRAGGLERS.—*a. Prisoners of war.*—Prisoners of war are generally collected by organizations and conducted under guard to designated division collecting points where they are turned over to the custody of the military police. (See FM 30-15.)

b. Stragglers.—In cavalry actions, because of the small number of military police available and the wide front over which the Cavalry may operate, straggler lines are rarely designated or operated. Stragglers are apprehended by independent military police patrols which are designated to patrol areas in rear of the combat troops. (See FM 29-5 (now published as BFM, vol. IX).)

■ 237. **BURIALS.**—*a.* In a small unit the dead are collected and buried by the combat troops under the direction of the supply officer, assisted by the chaplain when present. Burials are usually made in local cemeteries.

b. In a larger unit, burials may be either by organizations or by details under the direction of the quartermaster. If quartermaster service elements are not available for burial duty it is necessary to detail combat troops for this duty.

c. See FM 100-10 and FM 27-10 for details as to burial.

APPENDIX I

GLOSSARY

The following definitions apply also to FM 2-5 and FM 2-10:

Advance by bounds.—An advance controlled by the assignment of successive movement objectives usually from one terrain line to the next.

Advance guard.—A security detachment which precedes the main body on the march.

Air scouts.—Personnel detailed to furnish warning of the approach of hostile aircraft.

Alinement.—A line upon which several elements are formed or are to be formed, or the dressing of several elements upon a line.

Antimechanized defense.—The measures employed to protect troops, installations, and establishments against mechanized, motorized, or armored units.

Approach march.—The advance, usually in extended dispositions, from the point where hostile medium artillery fire is expected or air attack is encountered to the point of effective small-arms fire.

Assault.—To deliver a concentrated attack from a short distance; to close with the enemy in hand-to-hand combat.

Assembly.—The regular grouping, in close order, of the elements of a command; the grouping of units in areas, prior to or following combat, for the purpose of coordination or reorganization preceding further effort or movement.

Attached unit.—A unit placed temporarily under the direct orders of the commander of another unit to which it does not organically belong.

Attack echelon.—The leading echelon in attack.

Base unit (or base of movement).—The unit on which a movement is regulated.

Bivouac.—An area in which troops rest on the ground with no overhead cover, shelter tents, or improvised shelter.

Bound.—The distance marched by a unit when advancing in a successive series of moves.

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- Camp.**—Shelter consisting mainly of heavy tentage; a temporary location or station for troops; to put into camp; to establish a camp.
- Center.**—The middle point or element of a command. If the number of elements considered is even, the right center element is considered the center element.
- Close order.**—Any formation in which units are arranged in line or column with normal or close intervals and distances.
- Column.**—A formation in which the elements are placed one behind another. A march column comprises all elements of a command marching on one route under the control of one commander, including such forward flank and rear security forces as may be employed.
- Command car.**—A motor vehicle, usually armed and armored, equipped with facilities to assist in the exercise of command therefrom.
- Combat team.**—A nonorganic grouping of two or more units of different arms, such as an infantry regiment, a field artillery battalion, and a combat engineer company.
- Corridor.**—A compartment of terrain of which the longer dimension lies generally in the direction of movement of a force or leads toward the objective.
- Counterattack.**—An attack by part or all of the defending force against a hostile attacking force for the purpose of regaining ground lost or destroying hostile elements.
- Cover.**—Natural or artificial shelter or protection from fire or observation, or any object affording such protection; the vertical relief of a trench measured from the bottom or from the trench board to the top of the parapet; to protect or provide security for another force or a locality.
- Covering force.**—Any body or detachment of troops which provides security for a larger force by observation, reconnaissance, attack, or defense, or any combination of these methods.
- Defilade.**—Protection from hostile ground observation and fire provided by a mask. Vertical distances by which a position is concealed from enemy observation.
- Deployment.**—An extension of the front of a command.
- Development.**—The distribution of a command from mass or route column disposition into smaller columns or groups in preparation for action.

Direction of march.—The direction in which the base of the command, whether actually in march or halted, is facing at the instant considered.

Disposition.—The distribution and the formation of the elements of a command and the duties assigned to each for the accomplishment of a common purpose.

Distance.—The space between elements in the direction of depth.

Dress.—The act of taking a correct alinement.

Drill.—The exercises and evolutions taught on the drill ground and practiced for the purpose of instilling discipline, control, and flexibility.

Echelon.—A formation in which the subdivisions are placed one behind another extending beyond and unmasking one another wholly or in part; in battle formation, the different fractions of a command in the direction of depth, to each of which a principal combat mission is assigned, such as the attacking echelon, support echelon, and reserve echelon; the various subdivisions of a headquarters, such as forward echelon and rear echelon.

Element.—One of the subdivisions of a command. The term "elements" is used in an inclusive sense to refer to all those various smaller units or parts of units, generally different in character, as service elements, meaning quartermaster, ordnance, engineer, and medical units, etc.

Envelopment.—An offensive maneuver in which the main attack is directed from an area wholly or partially outside and to the flank(s) of the initial disposition of the enemy's main forces and toward an objective in his rear; usually assisted by a secondary attack directed against the enemy's front.

Essential elements of information.—That information of the enemy, of the terrain not under control, or of meteorological conditions in territory held by the enemy, which a commander needs in order to make a sound decision, conduct a maneuver, avoid surprise, or formulate the details of a plan. They include questions relating to enemy capabilities, other intelligence specifically desired by the commander, and information requested by other units.

Evolution.—A movement by which a command changes its position or formation.

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Extended order.—Formations in which the individuals or elements are separated by intervals or distances, or both, greater than in close order.

File closer.—An officer or noncommissioned officer placed in rear of a rank to supervise the men in ranks and see that the orders of the leader are carried out. For convenience, this term is applied to any man posted in the line of file closers.

Flank.—The side of a command, from the leading to the rearmost element, inclusive. Right flank is the right side, when facing the enemy, and does not change when the command is moving to the rear.

Flank guard.—A security detachment designed to protect the flank of a marching force.

Foragers.—Mounted troopers abreast of each other with intervals greater than those prescribed for close order.

Formation.—The arrangement of the subdivisions of a command so that all elements are placed in order in line, in column, in echelon, or in any other designated disposition.

Front.—The direction of the enemy; the line of contact of two opposing forces; the space occupied by an element measured from one flank to the opposite flank.

Frontage.—The space, in width, occupied or covered by a unit in any formation.

Gait.—Manner of movement of the horse, that is, the walk, trot, or gallop.

Gait of march.—The gait at which the base of a mounted unit is moving at the instant considered.

Guide.—An individual who leads or guides a unit or vehicle over a predetermined route or into a selected area.

Head of column.—First element of a column in order of march.

Hold (verb).—To retain physical possession.

Holding attack (secondary attack).—That part of the attack designed to hold the enemy in position and prevent the redistribution of his reserves.

Horse length.—A term of measurement. For convenience in estimating space, a horse length is considered 3 yards; actually, it is about 8 feet.

Initial point.—A point at which a moving column is formed by the successive arrival of the various subdivisions of the column.

Interval.—Space between individuals or elements of the same line. Between mounted troops it is measured from knee to knee. Between dismounted troopers it is measured from elbow to elbow. Between vehicles it is measured from hub to hub.

Leading.—The acts of a commander in controlling his unit by personal direction; the term used to designate a method of marching whereby the trooper dismounts but continues the march, leading his mount.

Light tank.—An armed and armored track-laying or convertible track and wheel motor vehicle designed primarily for combat.

Line.—A formation in which the next lower subdivisions of a command are abreast of one another.

Line of departure.—A line designated to coordinate the departure of attack elements.

Main body.—The principal part of a command; a command less all detachments.

Maneuver.—Movement so designed as to place troops, material, or fire in favorable strategic or tactical locations with respect to the enemy; also a tactical exercise executed on the ground or map, in simulation of war and involving two opposing sides, though one side may be outlined, represented, or imaginary. The plural of the term applies to a series of such exercises, generally involving large bodies of troops in the field in simulation of war.

March unit.—A subdivision of a marching column which moves and halts at the command or signal of its commander.

Mechanized elements.—Those elements of cavalry equipped with armored and self-propelled motor vehicles designed for combat purposes and in which weapons are mounted.

Mission.—A specific task or duty assigned to an individual or unit or deduced from a knowledge of the plans of the immediate superior.

Objective.—A locality which a command has been ordered to reach and occupy or a hostile force which a command has been ordered to overcome.

Outguard.—The most forward security unit posted by an outpost.

Outpost.—A detachment detailed to protect a resting or defending force against surprise by hostile ground forces.

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- Pace.**—A step of 30 inches; the length of the full step in quick time; rate of movement.
- Park.**—An area used for the purpose of servicing, maintaining, and parking vehicles.
- Patrol.**—A moving group or detachment sent out from a larger body on an independent or limited mission of reconnaissance or security or both; the act of patrolling.
- Phase line.**—A line or terrain feature which troops are directed to reach by a specified time, and which is utilized by a commander for control or coordination.
- Rank.**—A row or line of men arranged side by side in close order, either mounted or dismounted; also grade or relative precedence in the military service by virtue of a commission, warrant, or the like.
- Rate of march.**—The average speed over a period of time including short periodic halts.
- Regulating unit.**—Those smaller units within march units which change gaits as a unit at the command or signal of their respective commanders.
- Road space.**—The distance from head to tail of a column when it is in prescribed formation on a road.
- Scout.**—A man specially trained in shooting, in using ground and cover, in observing, and in reporting the results of observation; a man who gathers information in the field; to reconnoiter a region or country to obtain information of the enemy or for any other military purpose; to act as a scout.
- Scout car.**—An armed and armored motor vehicle used primarily for reconnaissance.
- Sector.**—One of the subdivisions of a coastal frontier; a defense area designated by boundaries within which a unit operates, and for which it is responsible.
- Security detachment.**—Any unit disposed to protect another unit against surprise or interference by the enemy.
- Serial.**—One or more march units, preferably with the same march characteristics placed under one commander for march purposes.
- Service units (or elements).**—Those organizations provided for by Tables of Organization within larger units whose functions are to provide for the supply, transportation, communication, evacuation, maintenance, construction, and police of the larger unit as a whole.

Successive formation.—A movement in which the different elements arrive in their proper places in formation successively.

Tactical groupings.—The balanced grouping of combat units and means within a command to accomplish a tactical mission. It may be accomplished by Tables of Organization, by standard operating procedure within a command, or improvised for a particular operation.

Tail of column.—Last element of a column in order of march.

Time length.—The time required for a column to pass a given point.

Time-distance.—The distance to a point measured in time. It is found by dividing the ground distance to the point by the rate of march.

Unit.—A military force having a prescribed organization.

Unit load.—A term used to indicate method of loading vehicles; supplies required for a particular unit being loaded as required on one or more vehicles.

Wave.—One of a series of lines of foragers, mechanized vehicles, skirmishers, or small columns into which an attack unit is deployed in depth.

Zone of action.—A zone designated by boundaries in an advance or a retrograde movement, within which the unit operates and for which it is responsible.

APPENDIX II

REFERENCES

The following subjects pertaining to cavalry training are found, as shown, in manuals other than the Cavalry Field Manuals, FM 2-5, FM 2-10, and this manual:

<i>Subject</i>	<i>Publication</i>
Administration.....	FM 100-10.
Aerial photographs, technical interpretation	FM 21-25; FM 21-23 (now published as TM 2180-5).
Animal management.....	FM 25-5.
Animal transport.....	FM 25-5.
Army baker.....	TM 10-410.
Army cook.....	TM 10-405 (now published as TM 2100-152).
Automotive maintenance.....	FM 25-10.
Band.....	FM 28-5.
Bugler.....	FM 28-5; TM 20-250.
Camping areas.....	FM 100-5; FM 101-10).
Care of animals.....	FM 25-5.
Clothing.....	FM 21-15.
Color sergeants and standard bearers	FM 22-5.
Combat intelligence regulations.....	FM 30-5.
Conventional signs.....	FM 21-30.
Defensive measures.....	FM 5-15.
Defense against chemical attack.....	FM 21-40.
Demolitions.....	FM 5-15.
Dismounted ceremonies.....	FM 22-5.
Dismounted drill.....	FM 22-5.
Domestic disturbances.....	FM 27-15.
Drill for combat motor units (except scout car platoon)	FM 2-10.
Drill for motor units (except combat units).....	FM 22-5.
Equipment, care and display.....	FM 21-15.
Equitation.....	FM 25-5.

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Field fortifications.....	FM 5-15.
First aid.....	FM 21-10.
Guidon, mounted and dismounted..	FM 22-5.
Gun, 37-mm, antitank.....	FM 23-70.
Gun, Thompson submachine.....	FM 23-40.
Horsemanship.....	FM 25-5.
Horseshoer.....	TM 2-220.
Hygiene.....	FM 21-10.
Instruction, dismounted, without arms	FM 22-5.
Instruction, dismounted with rifle	FM 22-5.
Instruction, mounted, without arms	FM 25-5.
Instruction with saber, officers'....	FM 22-5.
Interior guard duty.....	FM 26-5.
Logistical data.....	FM 101-10
Machine gun, caliber .30, HB, M1919A4 (ground).....	FM 23-45.
Machine gun, caliber .30, HB, M1919A4 (mounted in combat vehicles)	FM 23-50.
Machine gun, caliber .30, M1917....	FM 23-55.
Machine gun, caliber .50, HB, M2 ground)	FM 23-60.
Machine gun, caliber .50, HB, M2 (mounted in combat vehicles)....	FM 23-65.
Manual of the pistol.....	FM 23-35.
Map and aerial photograph read- ing	FM 21-25; FM 21-26 (now published as TM 2180-5).
Messenger.....	FM 24-5.
Military courtesy and discipline...	FM 21-50.
Military sketching.....	FM 21-35.
Military police.....	FM 29-5 (now published as BFM, vol. IX).
Mortar, 60-mm, M1.....	FM 23-85.
Mortar, 81-mm, M1.....	FM 23-90.
Motor transport.....	FM 25-10.
Motor vehicle operator.....	FM 25-10.

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Motor vehicles.....	FM 25-10.
Operations.....	FM 100-5.
Organization.....	FM 101-10.
Observation.....	FM 30-10.
Packer.....	FM 25-5
Pack transportation.....	FM 25-10.
Panoramic sketching.....	FM 21-35.
Physical training.....	FM 21-20.
Pistol, caliber .45, M1911.....	FM 23-35.
Rifle, caliber .30, M1903.....	FM 23-10.
Rifle, caliber .30, M1.....	FM 23-5.
Road spaces.....	FM 101-10.
Saddle pack.....	FM 21-15.
Saddler.....	TM 10-430 (now published as TM 2100-25).
Salutes and honors.....	FM 21-50.
Scouting and patrolling, dismounted	FM 21-45 (now published as BFM, vol. I, ch. 9).
Shelter tent drill.....	FM 21-15
Shoeing animals.....	FM 25-5; TM 2-220.
Signal communication specialists' training	TM 11-450 (now published as TM 2260-5).
Signal communication.....	FM 24-5.
Staff data.....	FM 101-5.
Technical data.....	FM 101-10.
Tent drill.....	FM 21-15; FM 22-5.
Training remounts.....	FM 25-5.
Training pack animals.....	FM 25-5.
Transportation of animals.....	FM 25-5.
Transportation of troops.....	AR 30-930; AR 30-935; AR 30-940; AR 30-945.

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